

# MANUFACTURERS' RECORD.

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## Manufacturers' Record.

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### COPY FOR ADVERTISEMENTS.

Advertising copy (changes or new advertisements) should reach us Saturday Morning to insure insertion in the issue of the following week. For the first issue in the month we should receive copy by Friday Morning of the week preceding.

Some of the most interesting examples of developed water-power in this country may be found south of the Potomac. Unique in many respects among the undertakings of the kind is the plant of the Virginia Electrical Railway & Development Co. at Richmond, Va., which, upon completion, will utilize the magnificent power of the James river. An elaborate description of this plant and of the plans of the company, of vital interest to Richmond, written by Mr. Edward H. Sanborn, general manager of the National Association of Manufacturers, is published on another page of this issue of the Manufacturers' Record. The plant, with its combination of water, steam and electricity, embodies many novel features, and its success will doubtless do much to hasten the development of other water-powers in the Southern uplands which have been practically of little value for generations.

On another page of this week's issue of the Manufacturers' Record is an elaborate review by J. Stephen Jeans, editor of the London Iron and Coal Trades Review, of the situation and outlook in the world's iron trade. Mr. Jeans has no doubt that the American iron trade will enjoy for a long time to come great advantages over Europe in respect of its possession of immense supplies of high-grade Bessemer ores, and he believes that there is a disposition on the part of European countries to resent the invasion of their markets by American manufacturers. He finds, too, that in Germany and in Great Britain it is fully recognized that the operation of a great steel combination is likely, through the considerable economy wrought by it, to place American manufacturers in a better position to compete in outside markets as long as the combination lasts. While these discussions are going on, however, the imports of American steel, according to Mr. Jeans, into both Great Britain and Germany proceed on an unprecedentedly large scale. The review, as an in-

dex of prevailing conditions and sentiments abroad as viewed by an expert, is a valuable contribution to the current literature of the iron and steel industry.

### The South's Production.

Nearly four months ago, in referring to the general agricultural and industrial advance of the South, with special reference to the effect upon the South's prosperity of the good prices which this season's cotton has commanded, the Manufacturers' Record stated that the year's income of the South from agriculture, manufactures and mining would be in round numbers \$2,750,000,000. It was estimated that cotton and cottonseed, raw and manufactured, would yield a total of \$750,000,000, that all other agricultural products would give at least \$500,000,000, and that the output of mines and manufactured products, other than cotton, would yield \$1,500,000,000. These figures were based on a fair knowledge on what the South is producing, and it was felt that whatever variation there might be in separate totals the aggregate would be probably more than was stated. In this week's issue the Manufacturers' Record presents in advance of the final returns of the census a general estimate of the South's productive capacity. This estimate places the value of cotton and cotton products at \$722,500,000, other agricultural products at \$685,500,000, and of manufactured and mineral products, excluding cotton products, at \$1,356,000,000—a total of \$2,764,000,000. This exhibit, based largely upon official facts, and in their absence upon reasonable calculations, is a splendid indication of the progress which the South is making agriculturally and industrially.

### North Carolina Advancing.

The North Carolina legislature has appropriated funds for the erection of a textile department at the College of Agriculture and Mechanic Arts in Raleigh. It will be remembered that about three years ago the necessity for a textile school in the State was strongly urged by the Watauga Club of Raleigh, and the project was endorsed by the Chamber of Commerce and Industry of that city and by the Southern Cotton Spinners' Association, and has been kept steadily to the fore. Leading manufacturers generously responded to the opportunity to furnish machinery to be used, upon the guarantee that the building should be erected. In passing this appropriation, which will be a great aid in carrying out the plans for placing the textile department at the college upon a substantial and practical basis, the legislature has done a good work for the young men of the State. It will enable many of them to prepare themselves for employment in the new mills now being erected, and its effects will undoubtedly be seen in the next few years in an advance of the textile industry of North Carolina. Such appropriations are returned to the

State many times over in the increased earning capacity of its citizens.

### The Spirit That Builds.

New England has seldom been accused of being slow, or of lacking the sturdy and aggressive traits which make for material progress. On the other hand, that section has been regarded as a peculiar home of energy and alertness. Worcester has been held to be one of its typical cities in that respect. Yet, Worcester seems to be stirred with that spirit of sublime discontent with itself out of which comes healthy growth. This is forcibly expressed in the Worcester Magazine, the vigorous young publication which promises to be of such importance in the development of the city. Remarkable as it may appear to the long-distance observer, the Magazine says that the greatest need of Worcester is a public spirit that acts. And it adds:

We are an inland city, without contributory territory that is developing much. There are no special attractions for great industries here, such as great water-powers, nearby coal fields and mines of iron ore. It seems reasonably clear that whatever Worcester hopes for her citizens must labor for, and the labor must be directed toward the accomplishment of specific ends, and those ends must be fundamental, such as the direct working for new industries. The city must have more manufacturing, and more and more manufacturing. That is the root of the matter, so far as growth is concerned. Whoever flatters himself that Worcester is destined to be a great city—greater, that is, than the natural growth of the country tends to make it—must determine to bring new industries in, and keep and nurture those already here, if he hopes to realize his hopes.

These sentiments have about them the ring of that quality which has in the past led New England to overcome what were apparently insurmountable obstacles, to adapt itself to changing conditions, and even while it was sending so much of brains and energy to build up other parts of the country, to maintain its prestige as an adept at making the best out of every circumstance. It is a pity that cities elsewhere which might be mentioned by the score have not yet been able to gain the wisdom which has made Worcester what it is, and which will keep Worcester on the up-grade.

One of the most thorough pieces of work ever done by the Southern Railway for the benefit of the section traversed by it is a booklet just issued by Mr. M. V. Richards, chief of the company's land and industrial department, showing the development during the past year in the textile industry along the line of the road. The publication shows that the equipment installed in mills during the year, or in process of installation at its close, represented 1,137,590 spindles and 22,185 looms. A number of established plants increased their equipment, several of them erecting new mills and others replacing old machinery with new. Ninety-four new mills were built and at present sixteen other textile buildings are in course of construction in the territory tributary

to the Southern Railway. In detail, in alphabetical order and by States, are given the names of every mill in the territory of the Southern, its postoffice address, the number of buildings occupied by it, its equipment of looms and spindles on January 1, 1901, compared with its equipment on January 1, 1900, its power, whether steam, water, electricity, steam and water, water and electricity, or steam and electricity, and the character of goods manufactured. This exposition applies to cotton mills and, for January 1, 1901, to knitting mills and woolen mills. It is followed by a table giving the names, the post-office address, the authorized capital and the probable equipment of mills now under construction.

### Not for Legislation.

Some months ago a subcommittee of the industrial commission went to New England to study cotton-mill conditions. Their visit was in vain, as the persons they wished to see seemed too busy to appear before them. Another visit has been made by a subcommittee, and one of the witnesses before it suggested as a remedy federal legislation designed to bring about uniformity of labor conditions. This idea has been threshed over and over again during the past three or four years, and has been generally combatted by individuals who recognize the evils of federal interference with the rights of private contract. The New York Commercial does not think it strange that the New England mill men who have been so long "in a position of defence against the demands and machinations of labor organizations as controlled by an active and designing body of pleasant-mannered and loquacious officials" should seek to relieve the tension of uncertainty as to the future of their business with outside competition increasing by endeavoring to bring about uniformity in labor laws. But it says:

It would be very questionable wisdom to invite congressional legislation in matters so intimately concerned with the personal relations between capital and labor, however desirable it might be to have uniform the conditions affecting the employment of labor and the conduct of industrial pursuits. . . . It is bad enough to rush to State legislatures for some curative of an industrial wrong, but would it not aggravate the situation by appealing to the national Congress for this purpose?

Sound sense gives an affirmative answer to this question. It may be that national legislation may in the dim future be able to bring about uniformity in labor conditions. That end will be gained when national legislation has been able to create uniform conditions of climate and human beings of uniform mental and physical traits.

The senate of Arkansas has created a special committee to which all anti-trust bills will be referred. It is reported that this committee will formulate a bill and report it to the senate. It would do better service to the State if it should pigeon-hole every measure of the kind brought to its attention.

# ONE YEAR OF SOUTHERN PRODUCTION.

A general estimate in advance of the final returns of the census of the South's productive capacity may prove of interest as indicating the progress of this section in agricultural as well as in industrial interests.

Mr. Alfred B. Shepperson, the noted cotton statistician, whose cotton figures are accepted throughout the world, in a letter to the Manufacturers' Record estimates the value of this year's cotton crop, including the seed, at \$535,000,000, though this is rather above the figures at which the Manufacturers' Record would place its own estimate. In this article, however, the aim has been to get official figures from the government or from other accepted authorities, in order to compare them with previous estimates made by the Manufacturers' Record.

The actual consumption of seed in oil mills, as learned from official sources, will be about 2,500,000 tons, costing to the mills an average for the whole South of \$10 a ton, or \$40,000,000, against \$15,850,000, the value of the seed sold to mills during the census year 1890. The total yield of seed for this season was about 5,000,000 tons, the consumption in oil mills being about one-half of the crop. The production of oil, cake, etc., from these 2,500,000 tons will be, according to official figures, about \$47,500,000.

Southern mills consumed 1,597,000 bales of cotton during the last crop year, and, but for the short crop and high prices, would have consumed about 1,750,000 bales or more this season. But, estimating the year's consumption to be the same as last year, or, in round figures, 1,600,000 bales, the best cotton-mill men in the South estimate that this will cost Southern mills about \$70,000,000. It is generally roughly estimated that the average value of cotton is trebled in going through the mills to its final manufactured state, but the census of 1890 shows that this is a little too high for the country at large, and that for the South the increase at that time was a little less than double. In other words, in the census year 1890 Southern mills took 581,882 bales, costing \$27,481,108, and turned out finished products worth \$46,971,503. By reason of a larger percentage of Southern mills' products being of a higher grade than in 1890 the gain would be greater, or say double the cost of the cotton as the value of the product. And thus the \$70,000,000 of cotton which will this season go through Southern mills will yield a product of about \$140,000,000. Based on the number of spindles in operation, between 5,000,000 and 6,000,000, compared with 1,700,000 in 1890, the value of the product ought to be even greater.

Summing up the cotton and seed on this basis, we have:

Shepperson's estimate of cotton and seed.....\$535,000,000  
Product of oil mills.....47,500,000  
Value of products made in Southern cotton mills on basis of 1,600,000 bales used.....140,000,000  
\$722,500,000

\*In this no account is taken of effect in fattening live-stock with cotton-oil-mill products, covered elsewhere.

Turning from cotton to diversified agricultural products, the exhibit is exceedingly gratifying. The official figures of the United States Department of Agriculture give the production and value of grain, hay and Irish potatoes by States as follows:

## PRODUCTION OF CORN IN 1900.

States.	Bushels.	Value.
Maryland.....	15,232,802	\$6,245,449
Virginia.....	28,183,766	13,810,042
North Carolina.....	29,790,180	16,980,403
South Carolina.....	18,129,187	8,402,648
Georgia.....	34,119,530	19,448,132
Florida.....	4,156,192	2,493,715
Alabama.....	29,355,942	17,026,446
Mississippi.....	26,231,908	14,634,559
Louisiana.....	24,702,598	12,351,299
Texas.....	81,962,910	38,522,568
Arkansas.....	45,225,947	19,447,157
Tennessee.....	66,997,830	27,928,961
West Virginia.....	19,299,708	9,649,554
Kentucky.....	69,267,224	27,706,890
Total.....	477,655,808	\$234,648,123

## PRODUCTION OF WHEAT IN 1900.

States.	Bushels.	Value.
Maryland.....	15,187,548	\$10,785,372
Virginia.....	9,422,352	6,783,791
North Carolina.....	5,960,803	4,887,553
South Carolina.....	2,142,828	2,164,256
Georgia.....	5,011,133	4,760,567
Alabama.....	916,351	815,552
Mississippi.....	40,781	34,256
Texas.....	23,396,913	14,973,354
Arkansas.....	2,689,418	1,748,122
Tennessee.....	11,036,088	9,239,910
West Virginia.....	4,452,895	3,423,729
Kentucky.....	12,442,846	8,685,564
Total.....	93,358,836	\$68,204,370

## PRODUCTION OF OATS IN 1900.

States.	Bushels.	Value.
Maryland.....	1,733,416	\$552,859
Virginia.....	5,167,593	1,912,000
North Carolina.....	5,270,753	2,270,753
South Carolina.....	4,023,149	1,931,112
Georgia.....	7,010,040	\$3,434,920
Florida.....	378,211	189,106
Alabama.....	4,380,754	1,927,532
Mississippi.....	2,230,052	1,099,424
Louisiana.....	614,142	245,667
Texas.....	28,278,232	5,440,470
Arkansas.....	2,463,532	1,068,532
Tennessee.....	5,810,166	2,033,558
West Virginia.....	2,768,451	941,273
Kentucky.....	9,309,293	2,385,881
Total.....	83,996,256	\$30,371,078

## PRODUCTION OF RYE IN 1900.

States.	Bushels.	Value.
Maryland.....	408,023	\$322,175
Virginia.....	370,125	214,672
North Carolina.....	411,287	312,578
South Carolina.....	29,265	30,728
Georgia.....	109,529	112,815
Alabama.....	14,071	14,493
Texas.....	64,630	43,302
Arkansas.....	19,723	14,390
Tennessee.....	124,507	84,600
West Virginia.....	128,796	81,789
Kentucky.....	294,592	185,594
Total.....	1,973,313	\$1,306,548

## PRODUCTION OF IRISH POTATOES\* IN 1900.

States.	Bushels.	Value.
Maryland.....	1,289,455	\$655,506
Virginia.....	2,223,778	1,312,029
North Carolina.....	1,063,474	601,253
South Carolina.....	335,946	335,946
Georgia.....	391,816	301,698
Florida.....	104,280	110,537
Alabama.....	417,533	342,705
Mississippi.....	288,068	288,068
Louisiana.....	639,530	426,308
Texas.....	916,913	806,888
Arkansas.....	2,127,316	1,212,855
Tennessee.....	1,365,660	792,083
West Virginia.....	3,029,120	1,544,851
Kentucky.....	2,807,490	1,403,745
Total.....	16,940,410	\$10,254,497

\*Sweet potatoes not included in reports of United States Agricultural Department.

## PRODUCTION OF HAY IN 1900.

States.	Tons.	Value.
Maryland.....	302,292	\$4,247,203
Virginia.....	589,133	7,835,469
North Carolina.....	176,680	1,978,816
South Carolina.....	192,453	2,213,210
Georgia.....	190,237	2,425,522
Florida.....	4,418	87,927
Alabama.....	94,061	962,344
Mississippi.....	99,524	994,524
Louisiana.....	60,301	472,839
Texas.....	548,877	7,332,377
Arkansas.....	228,580	2,022,933
Tennessee.....	313,432	3,698,498
West Virginia.....	647,600	7,337,840
Kentucky.....	390,084	4,427,226
Total.....	3,730,053	\$42,466,428

The total of these is as follows:

Corn.....	\$234,648,123
Wheat.....	68,204,370
Oats.....	30,371,078
Rye.....	1,306,548
Irish potatoes.....	10,254,497
Hay.....	42,466,428

Of other agricultural products in the South the total value last year was as follows:

Sugar.....	\$26,300,000
Tobacco.....	40,000,000
Rice.....	10,000,000
Sweet potatoes.....	25,000,000
Peanuts.....	3,000,000
Poultry and eggs.....	25,000,000
Milk and butter (counted together).....	20,000,000
Fruits and vegetables shipped and consumed at home.....	100,000,000
Cattle and swine killed for home consumption and shipped away.....	30,000,000

Summing up these figures of the total value of agricultural products, except cotton, in round numbers, we have \$685,500,000.

In 1890 the value of the South's agri-

cultural products, exclusive of cotton and including cattle and swine consumed and sold, was, according to the census, about \$450,000,000. Thus, through the great increase in grain production and in fruit and truck growing, these figures show a gain since that year of about \$176,000,000. It is really surprising that the increase is not much larger, and the final census returns, not yet fully completed, may make a considerable gain on these figures. In 1890 the cotton crop of 7,472,000 bales was worth \$363,884,000, the seed sold to mills being \$15,852,000. This year's crop of nearly, or quite, 10,000,000 bales, or a gain of about 2,500,000 bales, with one-half of the seed sold to mills for \$40,000,000, is estimated by Colonel Shepperson as worth \$535,000,000, the bulk of the crop having been sold early in the season when the price was very high.

The production of sugar is mainly in Louisiana, the crop for the year having been 270,000 tons, worth \$25,704,000. Texas produced 7000 tons.

As reported by the United States Agricultural Department, the rice crop of the year was 280,000,000 pounds, and the value of it was approximately between \$10,000,000 and \$11,000,000. About 4,500,000 bushels of peanuts, estimated at \$3,000,000, was the output of this crop, though this is probably too small, as the peanut crop in Florida alone was \$932,000. The tobacco crop was 550,000,000 pounds, and its value was estimated at from \$40,000,000 to \$45,000,000. The value of the swine, sheep and neat cattle of the South on January 1, 1900, was over \$200,000,000, and the value of those shipped away and killed for home consumption was about \$30,000,000 to \$35,000,000. Within the last ten years the use of cottonseed products has become an important element in the fattening of live-stock, and the final census reports may show that these figures are considerably too small.

The milk production was 780,000,000 gallons, which, even at a valuation of five cents a gallon, would represent \$39,000,000 in value. Out of that portion used for butter there were made 197,000,000 pounds, worth, at ten cents a pound, \$19,700,000; but, in order to avoid duplication, only the value of the milk will be counted in the total figures. The poultry interests form an important part of farm production. The number of poultry, including turkeys, ducks, geese and chickens, is over 118,000,000, and the production of eggs for the year was over 135,000,000 dozen. The value of the eggs and poultry consumed at home and sold was over \$25,000,000, but at this figure the average consumption of poultry and eggs per family would be only \$5 a year, as the South now has about 5,000,000 families. The exact figures are probably much larger.

During the last ten years the trucking and fruit business for shipment to Northern and Western markets has wonderfully developed. The total for the whole South cannot be given with any degree of accuracy, but a few facts here and there indicate the magnitude of this industry. Careful reports have shown that the trucking business immediately around Norfolk averages about \$8,000,000 a year. The Illinois Central Railroad, through Mr. T. J. Hudson, traffic manager, advises the Manufacturers' Record that during 1900 that road "handled about 23,000 cars of fruit and vegetables from the Mississippi valley country, having an approximate value of \$10,350,000." In Tennessee the Nashville, Chattanooga & St. Louis road handled 5349 tons of fruits and vegetables originating on its own lines and 50,996 tons received from other roads, while the other roads in that State handled about

28,000 tons which originated on their own lines. The Louisville & Nashville Railroad handled of fruits and vegetables during the year 17,472 cars, or 185,931 tons. The Southern Railway Co. makes no report of this character, but its fruit and vegetable freight was doubtless largely in excess of that of any other road in the South, as, with its great mileage, it drains the whole central South from Virginia to the Mississippi river. In some years it has hauled about 10,000 carloads of Georgia watermelons alone. The Atlantic Coast Line and the Seaboard Air Line and others do a very heavy business with fruits and vegetables, and when we turn to the coast region of Texas and to Arkansas we also find an enormous tonnage of the same character. It is not generally known that three-fourths of the peach crop of the United States is grown in the South. No later figures than 1890 are yet available, as the statistics of these small crops are only compiled in each census year. In 1890 the South's production of apples was double that of peaches, and the difference is doubtless still greater now, as apple-growing is probably making even more rapid progress than peach production. The yield of apples and peaches for 1890 by States was as follows:

States.	Apples, Bus.	Peaches, Bus.
Maryland.....	1,410,413	893,025
Virginia.....	8,331,425	1,032,000
West Virginia.....	4,439,978	376,680
North Carolina.....	7,591,541	2,730,915
South Carolina.....	435,484	1,480,635
Georgia.....	2,113,055	5,525,119
Florida.....	2,610	230,250
Kentucky.....	10,679,359	846,128
Tennessee.....	7,283,945	2,555,000
Alabama.....	1,238,734	2,432,200
Mississippi.....	606,368	1,234,264
Louisiana.....	117,748	310,237
Texas.....	742,993	5,106,322
Arkansas.....	1,894,246	3,201,125
Total for country, South included.....	46,947,029	27,993,106

Thus out of a total apple crop of 143,105,689 bushels the South had 46,947,000 bushels, and out of a total peach crop of 36,367,000 bushels the South had 27,993,000 bushels. In 1890 Florida's orange crop yielded \$690,000, and the 1900 yield will doubtless considerably exceed that.

The peanut crop of that State is officially reported at \$932,000, pineapples brought \$392,000, and sweet potatoes \$855,000. For some unknown reason the United States Department of Agriculture, in its annual reports, takes no account of sweet potatoes. It reports the yield by States of "potatoes," but fails to specify that this refers only to white or Irish potatoes. In this way the South is placed at a disadvantage in comparison with other sections, for its production in this line is mainly of sweet potatoes. In 1900 its Irish-potato crop was 16,940,410 bushels, worth \$10,254,497. Its sweet-potato crop, which is never recorded except in census reports, was, in 1890, 39,000,000 bushels. With an increase in population of about 25 per cent. in ten years, and a greater increase in agriculture, the South's sweet-potato crop must be about 50,000,000 bushels at present. The average value of the Irish-potato crop, as reported by the United States Agricultural Department, was sixty cents a bushel, but, estimating the sweet potatoes at fifty cents, the aggregate value would be \$25,000,000.

These items are simply given at random, gathered here and there to show that with \$8,000,000 trucking crop at Norfolk, with \$10,000,000 of fruits and vegetables from the Mississippi valley over the Illinois Central alone, with 185,000 tons of similar freight over the Louisville & Nashville, with 25,000,000 to 30,000,000 bushels of peaches and 45,000,000 to 50,000,000 bushels of apples, with the vast fruit and trucking business in the Carolinas and Georgia, in Southern Alabama, in Texas and Arkansas, Tennessee and other States, the estimate of the South's shipments of fruits and vegetables at \$50-



000,000 must be accepted as conservative. Certainly an equal amount was consumed at home.

Thus, as per the preceding tables, we have:

Total from cotton, including man-	\$722,500,000
Other agricultural products than	685,500,000
cotton, as given in detail.....	
Total.....	\$1,408,000,000

Omitting the manufactures of cotton and cotton oil, these figures show the total value of the South's agricultural products as \$1,220,500,000.

Now let us turn our attention to industrial interests. Here we must largely depend, so far as the total value of products is concerned, upon estimates, but estimates based on known facts.

The best way to get at the facts will be to turn to the census reports of 1880 and 1890 and see on what basis to make estimates. As the manufacture of cotton and cottonseed has already been estimated, we will take the figures giving the total production for 1880 and 1890, less cotton goods and cotton oil, and then make a comparison. In 1880 the total value of the manufactured products of the South (excluding products from cotton) was \$429,700,000, and in 1890 the total was \$851,200,000—a gain of a fraction less than 100 per cent., or \$421,500,000. It is certain that the actual increase in manufactures and mining between 1880 and 1890 was very much greater than between 1880 and 1890, even though the percentage may not be so large. If the percentage of increase should prove to be as great, this would give a total for the year (excluding cotton and cotton-oil goods) of nearly \$1,700,000,000, without counting mineral products. In 1890 the total value of mineral products of the Southern States was as follows:

Pig Iron.....	\$42,389,972
Gold.....	326,710
Silver.....	674,132
Copper, lead and zinc.....	1,200,000
Petroleum.....	38,632,265
Natural gas.....	18,505,465
Cement.....	2,471,609
Stone.....	1,309,798
Coal.....	5,430,653
Salt.....	9,057,000
Coke.....	396,000
Salt.....	5,076,836
Phosphate rock.....	772,672
Mineral waters.....	2,019,000
Other products.....	2,019,000
Total.....	\$126,301,502

The total value of minerals in each State in 1890 was:

Alabama.....	\$31,822,409
Arkansas.....	1,222,266
Florida.....	2,945,313
Georgia.....	2,185,595
Indian Territory.....	2,324,785
Kentucky.....	7,347,298
Louisiana.....	330,503
Maryland.....	9,040,685
Mississippi.....	48,292
North Carolina.....	523,172
South Carolina.....	1,650,350
Tennessee.....	11,966,258
Texas.....	3,435,770
Virginia.....	12,015,307
West Virginia.....	39,442,960
Total.....	\$126,301,502

Pig-iron, being counted in manufactured products, should be deducted from these figures in order to avoid duplicating, and so this would leave \$84,000,000 of mining products to be added to the \$1,700,000,000 of manufactured products, or a total of \$1,784,000,000. But it is hardly probable that the percentage of increase has been quite as great as between 1880 and 1890. In that decade the percentage of increase for the entire country was about 80 per cent., the total value of manufactured products for 1890 having been \$9,370,000,000, against \$5,369,000,000 in 1880. Now, if the South's manufactures increased as rapidly in percentage between 1880 and 1890 as the total for the country between 1880 and 1890, or 80 per cent., the total for 1890 would be about \$1,530,000,000, to which must be added \$84,000,000 for mineral products, or \$1,614,000,000. Even if the actual gain between 1880 and 1890 was only as much as between 1880 and 1890, or \$421,500,000 (and if this were true the South would be falling behind

the progress of the country at large), the total value of manufactured and mineral products (not including cotton and oil goods) for the census year 1890-1900 would have been \$1,350,000,000, and using this ridiculously low estimate, we would then have the following:

From cotton and cotton products.....	\$722,500,000
Other agricultural products.....	685,500,000
Manufactured and mineral products (excluding cotton products) on this lowest estimate.....	1,356,000,000
Total.....	\$2,764,000,000

Thus, taking the very lowest possible estimate of the South's manufactured products, the total productions of the South for the year would aggregate \$2,764,000,000, whereas the true figures for manufactures and mining are, of course, much larger than the \$1,356,000,000 estimate.

Now, let us undertake to form some idea from stray straws as to whether the South's increase of manufactures and mining during the last decade is as great as during the preceding one. In 1890 the South's output of coal was 22,000,000 tons, a gain of 16,000,000 tons over 1880. In 1900 the South's coal production was probably nearly 45,000,000 tons, a gain of 22,000,000 tons over 1890. The South's pig-iron production last year was 2,604,671 tons, against 1,744,161 tons in 1890.

In cotton manufacturing the South had 1,700,000 spindles and \$61,000,000 of capital in 1890, a gain of about 1,100,000 spindles and of \$40,000,000 capital over 1880. The South now has over 6,000,000 spindles, or three and one-half times as many as in 1890. The actual capital cannot be known until the census is completed, but the percentage of increase is less than in the number of spindles because of the lower cost of equipment, for, on the same basis of capital to spindle as in 1890, the South's capital in cotton manufacturing would now be over \$200,000,000, whereas it is no doubt very considerably less. There are in active operation this season 425 cottonseed-oil mills, representing an actual cash investment of over \$50,000,000, against 119 with a capital of \$12,808,000 in 1890, and forty-five with a capital of \$3,800,000 in 1880.

The lumbering interests of the whole South have grown with great rapidity during the last decade. Instead of sending away all our lumber in its rough shape, we are turning out more and more finished products, as illustrated by the simple statement that High Point, N. C., has within ten years developed a furniture-making industry the output of which was \$1,500,000 last year, against little or nothing ten years before. A year ago Mr. B. F. Fernow, the forestry expert of the country, in an elaborate article in the Manufacturers' Record, showed that the lumber business of the South, including that used for fencing and fires, aggregated over \$200,000,000 a year.

Ten years ago the Newport News shipyard was in its infancy; now it represents over \$12,000,000 cash capital invested, employs nearly 7000 hands, and has about \$27,000,000 of work on hand. The Richmond Locomotive Works was then a small industry; now it has become one of the world's great locomotive plants, and has lately increased its capital stock from \$2,500,000 to \$4,500,000. The Maryland Steel Co., Baltimore, was in 1890 feeling its way, with its future still uncertain; now it ranks as one of the world's more important steel industries, representing a capital of over \$10,000,000, with its shipyard having on hand a vast amount of business. The Trigg shipyard at Richmond had not been born in 1890; now it employs 1000 or more men. Birmingham had no steel industry then; now it has in steel and steel wire-making over \$3,000,000. These leading industries are but illustrations of the general progress of

the South's whole industrial life, and the census now being compiled will shortly show that the total production in agriculture, manufactures and mining for the year ended June 30, 1900, was doubtless as much as \$2,750,000,000, though our re-

cent estimate of the South's productive capacity was intended to cover the twelve months of the cotton-crop year of 1900-1901 rather than the preceding year, in which the cotton crop was not so valuable as this year's.

## The Situation and Outlook in the World's Iron Trade.

By J. Stephen Jeans, Editor of the London Iron and Coal Trades Review.

The iron trade was always more or less fruitful in surprises. Of all the great industries of the world, its future can be predicted with the least confidence. Every now and again great booms are generated which were never anticipated, and depressions follow that no human foresight can fathom. Such has been the recent experience of this great industry to a much larger extent than usual, and for the more striking elements of the unexpected the United States must be held mainly responsible. The enormous increase of pig-iron production in that country in 1899, the enormous and phenomenally rapid rise of prices during that year, the considerable scale on which the export of iron and steel to Europe was begun and carried on, the establishment of so-called consolidations of capital on a scale never previously dreamt of, the rapid and colossal development of iron-ore supplies in the Lake Superior region, the generally large scale on which all mechanical industries have been expanded—these are but a few of the surprises sprung upon Europe within a recent period.

All this, indeed, is so very recent that a good deal of it is still pending, and European manufacturers and merchants, not to speak of consumers, have hardly had time to realize what it all means. It is equally difficult to realize that within little more than six months there has been an absolutely entire appearance of collapse in the mineral and metallurgical industries of the world. A year ago it was doubtful whether there would not be a pig-iron famine in Europe. Today blast furnaces are being blown out by the score, and in great Britain alone nearly seventy furnaces have been extinguished within the past few months. The price of pig-iron has fallen about 25/ per ton, of steel rails about 35/ per ton, of ship plates 30/ to 35/ per ton, of common bars 50/ to 60/ per ton, and of tinplates 3/ per box, while there is a decline of 6/ per ton in Spanish ores and of 8/ to 10/ per ton in coal. It is only a few months ago since British and German manufacturers were refusing orders because their books were full. Today many of them hardly know where to turn for next week's work, and few of them are really fully occupied.

All this is only what might have been predicted by the business man of experience and the philosophic observer. The boom began in Europe in 1896, and in 1897 had already attained considerable magnitude. The United States followed in 1898 and kept the ball merrily rolling throughout 1899 and a great part of 1900. Even Russia was affected as it had never been before, for the production of pig-iron increased during this interval from about 2,000,000 tons to about 3,000,000 tons a year. The depression is now somewhat acute in most European countries, Russia not excepted. Naturally there is a greater scramble than ever for outside markets, and business men are asking themselves what is likely to happen next.

But the threatening increase of competition on the part of the United States is not the only trouble that is brewing for European countries. Great Britain is face to face with the probability of increased competition on the part of her

own colonies. It is a far cry from the building of a steel plant in Nova Scotia to the capture of the world's markets, but the new steel plants at Sydney and North Sydney are ostensibly planned with that end in view, and in the course of a year they may help the United States to dislodge the older countries of Europe from their supremacy. Not only so, but arrangements have been made for building a great iron-making plant in New South Wales, which is expected to produce 150,000 to 200,000 tons of steel a year, and which, while it may or may not compete with British products in other Australasian colonies, will most assuredly do so in New South Wales itself. There is, moreover, a probability of new iron and steel works being constructed near to Calcutta, in British India.

There can be no doubt that the iron-making and steel-producing resources of the world are equally in excess of the actual requirements, and are likely to be a good deal more so in the not distant future. The capacity of pig-iron production in the United States is computed by the American Iron and Steel Association at about 20,000,000 tons a year. Not only so, but leading American journals have placed the increased capacity of the works under construction a month or two ago at 3,000,000 tons a year additional. In Germany at a recent date twenty new blast furnaces were under construction, chiefly in the Alsace-Lorraine region, which would represent a further increase of about 1,000,000 tons of pig per annum. In Great Britain very few new furnaces have recently been built, but the furnaces relined and reconstructed are probably equal to at least 750,000 tons a year. In Russia the recent activity in blast-furnace construction has been phenomenal, especially in the south, and when the furnaces now building have been completed, we shall probably have at least 500,000 tons a year added to the estimated output of 3,000,000 tons in 1900. The new plants of Canada will be equal to supplying from 400,000 to 500,000 tons a year, and there remain about twenty new furnaces in Italy, Spain, France, Austria-Hungary and Belgium, of which the annual output may be taken at 30,000 tons per furnace, or 600,000 tons in all. The united capacity of all the new furnace plants now under construction is therefore from 6,000,000 to 6,500,000 tons of pig-iron a year, and it need hardly be added that the new rolling-mill plants are not very far behind.

At this point the important question is presented, What is likely to be the world's demand for pig-iron in the near future? So far as can be estimated, the actual output of pig-iron throughout the globe was about 39,500,000 tons in 1899 and about 40,500,000 tons in 1900. In 1897 the estimated or ascertained corresponding output of pig-iron was about 33,500,000 tons, so that there was an increased output of about 7,000,000 tons within three years. Those years, however, represented a period of almost unparalleled boom. There is no good reason to suppose that the rate of increase of that period would be maintained in the near future. The rate of progress is much more likely to be that of a period of de-



pression, and if, for comparison, we take the period 1889-90, we find that during these eight years the total increase of pig-iron production throughout the world only amounted to 3,500,000 tons, or little more than one-half of the increase that is being provided for by the furnaces building or rebuilding at the present time. There is, indeed, a great probability that in the next few years there may be no increase at all worth speaking of. The year 1890 was like the years 1898 and 1899, one of phenomenal activity, but the output of that year, amounting to close on 28,000,000 tons, was not reached again until five years later.

In view of the facts and figures just recorded, it seems probable that we shall shortly experience all the unfortunate results of overproduction of pig-iron which may and probably will become almost as general as the exceptional demand of the last few years.

The American iron trade will no doubt for a long time to come enjoy great advantages over Europe in respect of its possession of practically unlimited supplies of high-class Bessemer ores. So long as these supplies are continued at their present price, the supremacy of the United States as a pig-iron manufacturing nation would seem to be assured. But this does not mean that pig-iron cannot be made at equally low rates in Europe. On the contrary, my friend, Mr. Charles Kirchhoff, with whom I had recently an opportunity of discussing the subject, has pointed out in a recent publication issued under his name, that in some parts of England and Germany pig-iron is made, or can be made, at about 30/ per ton, and not many American works, I take it, can under ordinary circumstances do much better. This is not, however, the cost of production at the present time, and may not become so again for a good while to come. That it can be attained over a large area I feel sure, provided that the most up-to-date arrangements are adopted for utilizing blast-furnace gases for power purposes, and substituting by-product for beehive ovens. I do not pretend to be able to say how far such a cost can be made general, but it would not surprise me to find that with coke reduced to its old level, 30/ pig is reached in Cleveland, Northamptonshire, Lincolnshire, South Staffordshire and South Wales—or, say, approximately over about one-half of the total area of production. With American furnace methods substituted for the often archaic systems in use here, the chances of cheap production would be materially improved. This fact is now much more generally realized than it was some years ago, and furnaces on American lines have been built at the Askam, the Jarrow and the Dowlais works, but British manufacturers not unnaturally ask themselves whether it is worth their while to undertake the heavy expenditure incidental to such a change, with no assurance of protection against a flood of American pig-iron that does not even profess to be marketed on ordinary competitive terms.

There is no doubt that there is on the part of European countries a strong disposition to resent the invasion of their markets by American manufacturers. This, of course, does not apply so much to manufacturers of what are known as American specialties, such as machine tools, or even locomotives, as it applies to the ordinary descriptions of iron and steel, which are in practically all essential particulars the same as those supplied in European countries, excepting only in the matter of price. Many manufacturers, and these not the least influential, refuse to believe that the United States can produce and sell in Europe, with a profit, cheaper than

the same goods can be produced in Great Britain and Germany. This, moreover, is a not unreasonable view, when it is kept in mind that there is the transport to tidewater in the United States and the ocean freight to Europe to provide for, as well as the handling of the material at both ends, and its inland delivery at the point of consumption in Europe. In other words, it will take a good deal of argument and a very authoritative display of figures to convince European industrialists that the exports of American products, such as rails, plates, bars and billets, to Europe is not done at an absolute loss on the quantities exported, which is compensated for by the profits realized on the supply of the home market under the protection of tariff.

The present price of steel rails, for example, is about £5 in the United States, and about £5 10/ to £6 in Great Britain, but against this we have to put the freight to Europe, the land transport to tidewater and the transport from European ports to the place of consumption. The same remark applies to bars, ship plates, angles and other products of the mill's and forges of the United States which are now being shipped to Europe in quantities of which, until now, we have had no experience.

Not unnaturally some anxiety is felt in Europe as to the influence of the trust movement on American exports of iron and steel. Both in Germany and in Great Britain it is fully recognized that the operation of a great steel trust, such as that now under discussion, is likely to be attended with considerable economy, and is consequently likely to place American manufacturers in a better position to compete in outside markets—so long as the trusts hold together. There are obvious and material economies possible under the trust system—economies in steadiness and regularity of working, in cross freights, in general transportation charges, in having work done in the works that enjoy the most suitable geographical position, in standing charges, in administration and personnel, in less frequent changes of rolls and in other directions. And these economies are not likely to be the less whatever the nominal amount of the capitalization may be, as capitalization affects only dividends, and not the actual costs of production. But there is one feature of the trust system that is believed in Europe to be fatal to its continued success. Very few people here believe that a large trust can hold long together. I am, of course, aware that the Standard Oil Co. is now approaching a respectable old age, and that there are other similar combinations in the United States and elsewhere that have held together for a considerable time. But every such organization has inherent tendencies to disintegration, either because of the competition of outsiders or because of demoralization from within. It will not be forgotten that some twenty years ago a trust was formed in England to control the manufacture of steel rails. That trust included all the leading British, German and Belgian rail manufacturers. A pooling and apportionment of contracts was arranged, and there appeared to be no good reason why the trust should not enjoy a long and prosperous life. But by and by strong firms demanded larger allotments, and became increasingly restive under the burden of, as they put it, carrying weaker concerns on their back. In short, it was alleged that the trust made it possible for certain concerns to have their existence continued, when they would have gone to the wall under a system of free fighting trade. Is this not likely to happen to some extent in the United States? I am aware that under the system of today the

works that cannot be worked at a profit will probably be closed—at least for a time. But this is not the last word. Works that have once been built and are fit for operating have generally come to stay. It rarely happens that they are entirely wiped out, and so long as they exist they are more or less of a menace to the rest.

But there is another aspect of the present situation that inspires hope and not a little confidence in Europe. The steel-trade combinations may not be exactly monopolies, but it will be difficult to persuade the man in the street that they are not so. And it is by the man in the street that public opinion is formed and statute law is ultimately determined. In all countries alike there is a strong feeling against monopolies that are not more or less under restraint. This is especially true of manufacturing monopolies, which are always suspected, and often justly, of a design to control production and prices—in other words, to enrich themselves at the cost of the general consumer. It is extremely unlikely, therefore, that the public will idly fold its hands and allow what is practically a great corner to be made in one of the most universal and indispensable of manufactured commodities. Not only so, but the special consumer will want to have a finger in the pie. In the case of the European steel-rail association already named it was found that home railway companies, colonial railway companies, inspecting engineers and others concerned adopted a more or less hostile attitude, and either withheld contracts or sent them elsewhere while the combination lasted. Needless to say, at that time the United States were not shipping rails to Europe, as they are today, or probably the combination would have found a much larger stream of orders diverted.

In the meantime all iron-making countries alike appear to be engaged in the irksome and threatening operation of reducing the prices of raw material and the other costs of production, and the country that makes the most rapid progress in this direction is likely to have an immediate advantage in the race. In Great Britain the cost of labor has seriously increased during the last three years, and it will be well indeed if normal costs can be resumed without serious labor troubles. In the wages of coal miners there has been an advance ranging from 55 to 80 per cent. on the standard, and even in Scotland, where wages have generally been materially lower than in England, coal miners are now earning \$2, or 8/, per day. The same condition of things applies to blast-furnace and steel-works labor, which has been advanced by 25 to 40 per cent. all round. The costs of material have already appreciably fallen—coke by 12/ per ton, Spanish ore by 5/ to 6/ per ton, and manufacturing coal by 5/ to 6/ per ton. But as much of the labor employed, alike in mines and works, is paid under sliding scales, the ascertainment of selling prices must be reached before the rate of wages is materially reduced, so that in the meantime makers of both iron and steel are in many cases paying much more than selling prices afford—in other words, are making pig-iron at an absolute loss. This, of course, is merely a temporary condition of things, which is subject to ultimate adjustment already well within sight. When that adjustment is effected the steel manufacturers of Great Britain will be able to produce rails, plates and bars a good deal more cheaply than they now do, and the chances of doing business with American steel may thus be materially affected. In the meantime the imports of American steel into both Great Britain and Germany proceed on an unprecedentedly large scale.

## LAUNCH OF THE KOREA.

**Largest Vessel Yet Constructed in the United States to Be Floated at Newport News.**

The Korea, the first of the two vessels now being built for the Pacific Mail Steamship Co. by the Newport News Shipbuilding & Dry-Dock Co., is expected to be launched on March 23. Mr. C. B. Orcutt, president of the Newport News Company, has furnished the Manufacturers' Record the following facts about the vessel's dimensions: Length between perpendiculars, 550 feet; length over all, 572 feet 4 inches; beam, 63 feet; depth, 40 feet; draught, 27 feet; displacement, about 18,600 tons.

Accommodations are to be furnished for 200 first-class passengers and 1200 in steerage. The ships are designed for a sustained speed of eighteen knots an hour, and it is expected that this speed will be materially exceeded for short periods. They are propelled by two four-cylinder vertical inverted direct-acting quadruple expansion engines, designed to develop 18,000 indicated horse-power. The passenger accommodations will be of the very best, and each vessel will be provided with all appliances and conveniences found on the modern Atlantic liners.

The sister ship of the Korea will be called the Siberia. They will ply between San Francisco and Japanese and Chinese ports, calling at the Sandwich Islands en route.

## THE ALGIERS DRY-DOCK.

**The Great Floating Structure Approaching Completion.**

The immense floating dry-dock being built by the Maryland Steel Co. at its works at Sparrow's Point, Md., is now fast approaching completion. When completed it will be towed to the United States naval reservation at Algiers, La.

The length over all is 525 feet; breadth over all, 126 feet 2 7-16 inches; breadth between walls, 100 feet; length of walls, 395 feet 5/8 inch; width of walls, 12 feet 1 1/8 inches. The weight of the dock will be 5855 tons, with equipments of 1000 tons, making a total weight of 6855 tons.

The dock when finished will have a capacity sufficient to dock a battleship of 18,000 tons when the dock or floor is awash, or of 15,000 tons with a free board of about two feet.

J. F. Wieser & Co., Hico, Texas, in a letter to the Manufacturers' Record says: "We have let the contract for a complete 200-barrel flour mill to the Barnard & Leas Manufacturing Co. of Moline, Ill. We have placed an order for a Sioux Corliss engine with the Murray Iron Works Co. of Burlington, Iowa. We are now in the market for all the belting that will be required, and desire only first-class belting. We will also place fuel-oil burners under four of our boilers, and will be pleased to hear from manufacturers making the best burner for using the Corsicana residuum and Beaumont crude oils. There are a great many new enterprises under contemplation in our section."

A considerable tonnage of coal is being shipped from Lambert's Point to Bermuda by barge lines. A number of cargoes have been ordered to replenish the stock at Bermuda, which has been diminished by the unusual demand of steamships calling at Hamilton for bunker coal.

John F. Love and others have incorporated the Chronicle Cotton Mills of Belmont, N. C., with capital stock of \$75,000 and privilege of increasing to \$125,000, for the erection and operation of a 5000-spindle cotton mill.



## DEVELOPING JAMES RIVER POWER.

**Richmond's New Plant, with Its Combination of Water, Steam and Electricity, Embodies Many New and Striking Features.**

By Edward H. Sanborn, General Manager National Association of Manufacturers.

[Written for the Manufacturers' Record.]

So numerous are the electrical installations throughout the country for the transmission of developed water-power that this utilization of nature's own energy is no longer the novelty that it was only a few years ago. Such installations may be seen of wide range in magnitude, with great variety of methods in the development and transmission of power, and meeting nearly every kind of condition that presents itself in the conduct of manufacturing enterprises. Electrical progress has increased enormously the industrial resources of the country by making available thousands of water-powers heretofore incapable of use because of disadvantages of location. No water-power is now so inaccessible as to be useless for manufacturing purposes, for its energy can be developed and transmitted wherever its use may be most convenient.

To the South in particular the possibilities of electrical-power transmission have been of incalculable value, for abundant water-power has been made available and has been utilized to great advantage. Water-powers can be found everywhere in the Southern uplands, but without modern methods of development and transmission most of them have been practically valueless for generations. So rapid has been progress in this line that now some of the most interesting examples of developed water-power may be found south of the Potomac. Augusta and Columbia years ago undertook to make use of the abundant power flowing past them, and in one case direct application of the developed power and in the other electrical distribution have stimulated enormously the industrial activity of these cities.

Numerous individual plants of similar character are equally interesting as illustrative of the resources which the South possesses and the manner in which they are being put to gainful use.

When the American Institute of Mining Engineers met in Richmond a few weeks since, bringing together a large number of widely-experienced engineers, the local entertainment committee was able to show them a power plant on the James river that presented some novel features, even to such a body of professional men. The works of the Virginia Electrical Railway & Development Co. were sufficiently near to completion to show to the visitors a plant that is in many respects unique among the power installations of this country, and the visit to this plant was one of the interesting features of the convention.

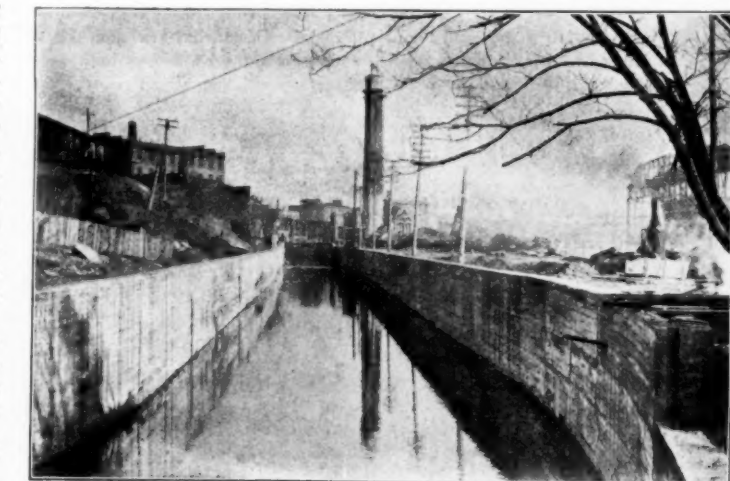
From an economic standpoint, as well as from a purely technical point of view, this undertaking possesses such interest as to warrant extended description.

The peculiar location of the city of Richmond presents industrial advantages and opportunities of much more than ordinary interest. At this point the James river drops abruptly from the broken uplands to the coastal plain, and thus it happens that below the city there is sufficient depth of water in the river to permit seagoing vessels to reach the wharves of the city, while above there is a succession of falls and rapids. Between the tidal limits below the city and a distance of three miles above there is a fall

of eighty-four feet in the James river, and within the nine-mile limit this drop in the river amounts to 112 feet. With a watershed of about 6900 square miles and a minimum flow of 1500 cubic feet per second, it is figured that the river can be depended upon to yield not less than 15,000

horse-power continuously, and a much larger power during the greater portion of the year. For several generations the James river has furnished the motive power for numerous industries in Richmond, but, as in many other similar cases, the difficulties of transmission and distribution prevented the utilization of the river's energy to its full extent or to the best advantage. Divided ownership of the water privileges and a considerable number of individual and to some extent conflicting interests tended to complicate the problem of de-

veloping the river's power resources when the mechanical difficulties had been overcome by the advances of recent years in electrical transmission. The physical, economic and financial difficulties have been so far overcome as to make the present enterprise of the Virginia Electrical Railway & Development Co. a notable achievement and a promising undertaking from every point of view.



CANAL LEADING TO POWER-HOUSE.

of water to the power-house, delivering it there with the requisite head.

3. A power-house equipped with turbines and electrical generators, with an emergency steam plant in reserve.

In addition to these essentials, the plant also includes, of course, the necessary system of conductors for the distribution of the power.

Operations of the Virginia Electrical Railway & Development Co. began in 1898 with the purchase of the old Haxall-Crenshaw flour mills on the north bank of the river, just at the head of tidewater.



PORTION OF DAM SHOWING DROPPING CREST.

On the site of these mills, once one of the most famous of Richmond's industries, the construction of the power plant was begun early in 1899. The entire plant is now practically complete.

The work of construction was placed in the hands of a separate but allied corporation, the James River Construction Co. The design and construction of the hydraulic features of the work have been in charge of Mr. Reuben Shirreffs, chief engineer of the development company. The steam and electrical features were

largely the design of Mr. Edward J. Willis, and since his resignation a year ago Mr. J. P. Pope, the present superintendent, has been in charge of this portion of the work. Sargent & Lundy of Chicago have also been employed as consulting engineers.

The dam crosses the river just above the Richmond & Petersburg Railroad bridge, starting from a point near the bridge piers on the Manchester side and extending to the upper end of Brown's Island on the Richmond side. The length of the dam itself, not including guard walls, is 1700 feet. Right here the first of the characteristic features of the plant presents itself in the construction of the dam. It should be noted first, however, that the average height of the crest of the dam above the granite bed of the river is only about five feet, the maximum height being eight feet. And yet so rapid is the fall of the river bed below this point that this dam will give a maximum head of twenty-seven feet at the power-house, 2200 feet down the river.

The dam is constructed entirely of concrete, as are all of the masonry structures of the plant. It is seven and one-half feet wide on top, the up-stream face being vertical and the down-stream face being built with a slope of seven inches to the foot. The most novel feature of this dam is the plan devised for raising the water-level above the crest of the permanent masonry dam. Masonry piers are built at intervals of forty feet upon the crest of the dam and carried to a height above the highest flood levels. Between these piers are hinged wooden gates, which raise the level of the dam four feet, but which can be swung upwards above the highest freshet levels that are likely to occur.

These movable sections are constructed of heavy pine timber and plank, and are faced with cotton duck heavily coated with North Carolina tar. The piers on the dam, between which these wooden gates are swung, carry a bridge, upon which is laid a track for the hoisting car used for the operation of the gates. This car is propelled and its hoisting apparatus is operated by an electric motor, which takes its current from a trolley wire stretched above the bridge. By this system the heavy timber gates can be raised

or lowered with very little manual labor. All of these adjuncts to the dam proper are carried at a level which places them above any flood waters.

The canal, which leads from the Richmond end of the dam, is fed through ten openings in the guard wall, each twelve feet wide by eight feet high. In each of these openings there are five small sluice-gates, carried in a heavy timber frame. When the river is high the supply of water can be controlled by these small gates, but when the river is low both the gates



and their supporting frames can be removed, thus leaving the full opening for the admission of water to the canal.

The canal is 2200 feet long, and follows the course of the old Haxall canal. The first 900 feet of the canal below the dam is a natural channel, enlarged by excavation of earth and rock to an average cross-section of about 1200 square feet. The remaining 1300 feet is of rectangular section, with concrete masonry side walls and bottom lining. This section of the canal is fifteen feet wide, and is built to carry thirteen feet of water. The bottom lining was put in solely to increase the carrying capacity, as this section of the canal was blasted out of solid rock for its entire length. It is expected that the canal will deliver a maximum of 5500 to 6000 cubic feet of water per second, the velocity being calculated at nine feet per second, or over six miles per hour.

The use of concrete, which attracts at-

mitted some pleasing architectural effects at no additional cost.

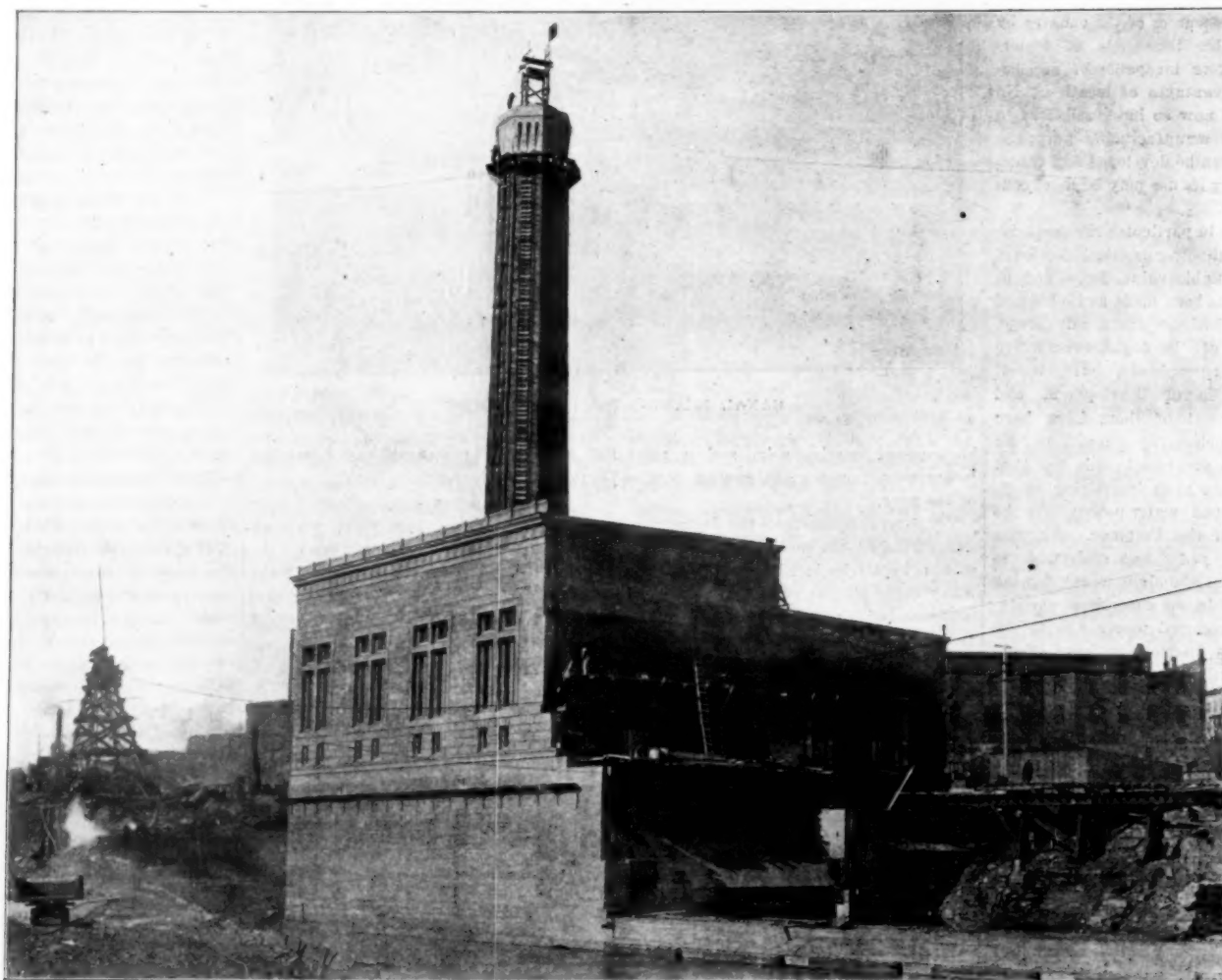
The power-house is the most strikingly unique feature of the enterprise. The foundation is of concrete, laid as a monolith in forms built up for the purpose. The excavation for the power-house and the tailrace was very largely in solid rock, and involved the removal of some 19,000 cubic yards of rock. On account of the very great weights and strains of the massive machinery on the one hand, and the tremendous pressure of the water in extreme freshets, when the river level will rise some twenty feet above the floor of the machinery room, it was obviously necessary to make the foundations of the power unusually massive. Under the machinery room the entire space to the excavated rock was solidly filled with concrete, except for the draft tubes that lead off the discharge from the turbines. These tubes are circular in section, ten and one-

the river to destroy the head. As the industries which will use the power generated in this plant must be protected against any possible interruption of operations from lack of power, it became necessary to install a complete steam-power plant with which to run the generators in event of any failure of the water-power from any cause whatever. It is not expected, however, that the operation of the steam plant will be necessary during more than one month out of twelve at the most.

The present installation of machinery comprises four units, each consisting of a pair of 51-inch horizontal turbines on the same shaft; a 750-kilowatt continuous-current generator direct-connected therewith, and a steple tandem compound engine, also direct-connected to the generator. Only three engines are installed at present, but provision has been made for the fourth in the present section of the power-house.

The condensing plant, of Worthington make, is of the siphon jet type, operating normally under the head from the river. A second condensing head at a higher level has also been provided, and a centrifugal pump with a capacity of 1000 gallons per minute has been installed to meet the conditions of high water when the natural head alone might not be sufficient. The condensing plant has capacity for taking care of one-half of the ultimate installation, which will consist of eleven units like the four already in place, or an aggregate of about 15,000 horse-power.

The steam plant consists of two double batteries of Babcock & Wilcox water-tube boilers, each single battery being rated at 500 horse-power. The boiler plant is equipped with Knowles feed pumps and Berryman heaters. The stack for the steam plant is another of the unique features of the plant, as it is of monolithic concrete construction. It is



VIEW OF COMPLETED PORTION OF THE POWER-HOUSE.

tention at every step, is one of the striking features of this entire plant, and it impresses the visitor most strongly when the power-house is reached at the lower end of the canal. Not only are the dam, canal and power-house foundations constructed of concrete, but the walls and roof of the power-house, the switchboard gallery floor and even the shell of the chimney are made of the same material. For the most part the concrete was made with Portland cement, except where only mass or weight was required, and then natural cement was used. James river granite, highly esteemed as a building stone, was excavated from the site of the work in sufficient quantity to make all the concrete, and river sand and the fine screenings of the crushed granite furnished excellent and cheap material. The universal use of concrete in this work was therefore not only a matter of convenience in construction, but also effected a very considerable economy, and in addition per-

half feet in diameter at the outlet of the wheels and fourteen feet at the river end. The wheel chambers are arched over the top, and these arches are utilized to support the steam boilers.

The section of the power-house that has been completed represents only about one-third of the plant as planned for ultimate construction. The present power-house is about 110 feet square. The walls are built of concrete blocks, molded in boxes and laid up in the walls precisely as stone ashlar. That portion of the building adjacent to the canal contains a boiler room at about the canal level, with the turbines beneath the floor. The machinery room, containing the generators and engines, is built on a much lower level, and has a height of sixty-four feet in the clear.

Perhaps the most conspicuous of the several unique features of this plant is the provision that has been made for the use of steam-power in such an emergency as extreme low water or a sufficient rise in

A simple bolted coupling effects the connection between the turbines and generators, and they can be disconnected in a few minutes when necessary. The engine flywheel is mounted between the generator bearings, and runs with the generator when driven by the turbine or engine. The engines are disconnected by uncoupling the connecting rods from the crankpins.

The engines will run condensing, and are rated at 750 horse-power at their best economy, but are capable of being pushed up to 1500 horse-power. The pair of wheels will develop about 1400 horse-power under the maximum head of twenty-seven feet. The generators furnish current at 550 volts at no load and 580 at full load. The engines were built by the Edward P. Allis Company of Milwaukee, the turbines by the Stilwell-Bierce & Smith-Vaile Company of Dayton, Ohio, and the generators by the General Electric Co. of Schenectady, N. Y.

175 feet high, and the flue is eleven feet in diameter. The lining, with the exception of about twenty-five feet of fire-brick at the bottom, is common brick. In erecting the stack wooden forms were built for the entire outside, the inside form being removed as the brick lining was carried up. The concrete was mixed at the base of the stack, sent up by a steam hoist and rammed in place. The plans for the complete plant provide for another similar stack.

In the machinery room there will be two drainage pumps, with a combined capacity of 600 gallons per minute, to handle any seepage that may percolate through the masonry in time of freshet. There is also a gravity oiling system, with tanks, pumps and filters. The turbines are equipped with Lombard governors. The entire machinery room is commanded by a 25-ton Shaw overhead traveling crane, electrically operated.

The auxiliary electrical equipment is



cludes two balancing sets to control the three-wire distribution of the incandescent circuits, a booster set to equalize the voltage of the different feeders at times of maximum load, and two motor-driven alternating sets to handle the alternating current output.

The switchboard, built of black marble and furnished by the General Electrical Co., occupies a high gallery on the river side of the machinery room. For the continuous-current service there are at present ten generator panels, nine railway feeder panels, two balancer panels, one booster panel, nine light and power panels and two wattmeter panels. The switchboard was built for three voltages, the company having adopted the 235-470 volt three-wire system for the distribution of light and power. There are two high and two low bus bars, and one common neutral bus.

dations were built by Winston & Co. of Chicago; the structural iron work was done by the Riter-Conley Company of Pittsburg; the roof covering was furnished by the Southern Expanded Metal Co. of Washington and the Warren-Ehret Company of Philadelphia, and the piping was done by Thomas C. Basshor & Son of Baltimore.

Contracts for about 4500 horse-power have been made by the development company with such interests as the Richmond Locomotive Works, the William R. Trigg Company, the Richmond Traction Co., the Richmond Electrical Co. and a large number of smaller consumers. The power requirements of the manufacturing interests of Richmond indicate that the entire output of the plant can be disposed of to good advantage, and there is reason to believe that the low rates which the development company can offer will induce

sources long utilized, but by indifferent methods, and without the economies and efficiency attainable by modern plans and equipment. Its engineering features are novel and unique, and must prove of interest for some time to come to the practical or professional man who has occasion to examine them.

#### WILL USE OIL FOR FUEL.

**Houston Industries Preparing to Enjoy Its Advantages.**

[Special Cor. Manufacturers' Record.]

Houston, Texas, March 18.

The article by C. F. Z. Caracristi, C.E., E.M., under the title "In the Texas Petroleum Fields," which appeared in the Manufacturers' Record, with map of the American continent, showing the location of petroleum fields, was reproduced in full, with illustrations, in the Houston Post of Saturday by special permission, and attracted a great deal of attention. The important facts contained in this article were condensed, and have appeared in many of the great dailies of the country, but, believing that the readers of the Manufacturers' Record will take especial interest in actual results in this immediate locality, I am pleased to tell you that the Houston Electric Street Railway Co., the breweries and several other plants are now making the necessary changes to begin burning oil as a fuel, and several cottonseed-oil mills and other important industries are only awaiting the result of actual tests before discarding coal and wood.

Houston has led the procession in this regard, and just as soon as the oil was discovered her principal consumers met and began a thorough investigation of the situation, and, as stated above, are now putting themselves in a position to use fuel oil.

Contracts have been entered into for a term of years at fifty cents per barrel delivered at the plants, and as it is usual to figure about three barrels of oil as equal to a ton of coal, this means that industries located here will get the advantage of coal at \$1.50 per ton.

The people here are not figuring on prospects as they have heretofore, but realize that the present and immediate future will witness an industrial development which could not possibly have occurred under ordinary circumstances for five years to come.

The Llano iron district, which has at different times been fully described by the Manufacturers' Record, will certainly be developed at no distant date, and that almost innumerable factories of different kinds will locate in the oil belt of South Texas is now assured. Millions of acres east, south and southwest of Houston are under lease, and before we reach mid-summer the number of wells will reach into hundreds.

Pipe lines to deep water at several points along the coast will put this oil within the reach of industries located on or near the Gulf and Atlantic coast, and capital is by no means shy in seeking investments of this character.

Houston's population, according to the United States census, showed an increase of 61.97 per cent. Her bank clearings reached a grand total in 1900 of \$404,301,449, or an increase over the preceding year of \$86,821,996, and I feel assured that this increase, vast as it was, will be doubled during the present year.

Added to the great activity created by the discovery of oil is the rice industry, which has frequently been described in your columns. Throughout the great rice belt of Southwestern Louisiana, and extending over a vast area of South and East Texas, of which Houston is the center, the increase in acreage will be so

great as to make me unwilling at this time to make even an estimate, and money in each rice center is easily available for the erection of rice mills.

Fortunately, the more conservative element are taking as great interest in oil and rice as are those who count themselves among the progressive class, and if a tremendous industrial activity is not witnessed here, then all signs fail.

The high price of fuel has been a menace up to this time in building factories in this district, and when one day makes an entire transformation, placing us from a high-priced fuel center to a position where we can quote as low or lower prices than any other portion of the United States, it is certainly sufficient to give us good cause for the absolute assurance that Houston and other South Texas points will be big producers of manufactured products. The people of Houston feel that they will get a great deal of direct benefit from oil and rice, for the reason that we not only have a waterway to the sea, but are better fixed from a railroad standpoint than any other city between the Missouri river and San Francisco.

Within the next month oil developments will be frequent occurrences, and I hope to be able to truthfully advise you before the close of the present year that not only are our old factories, but many new ones, our railroads and other fuel consumers burning oil, but that it has been introduced into the homes, for we thoroughly realize that we must completely harness this great gift of nature if we are to hold the palm as the most progressive section of the country. TOM RICHARDSON,

Secretary Houston Business League.

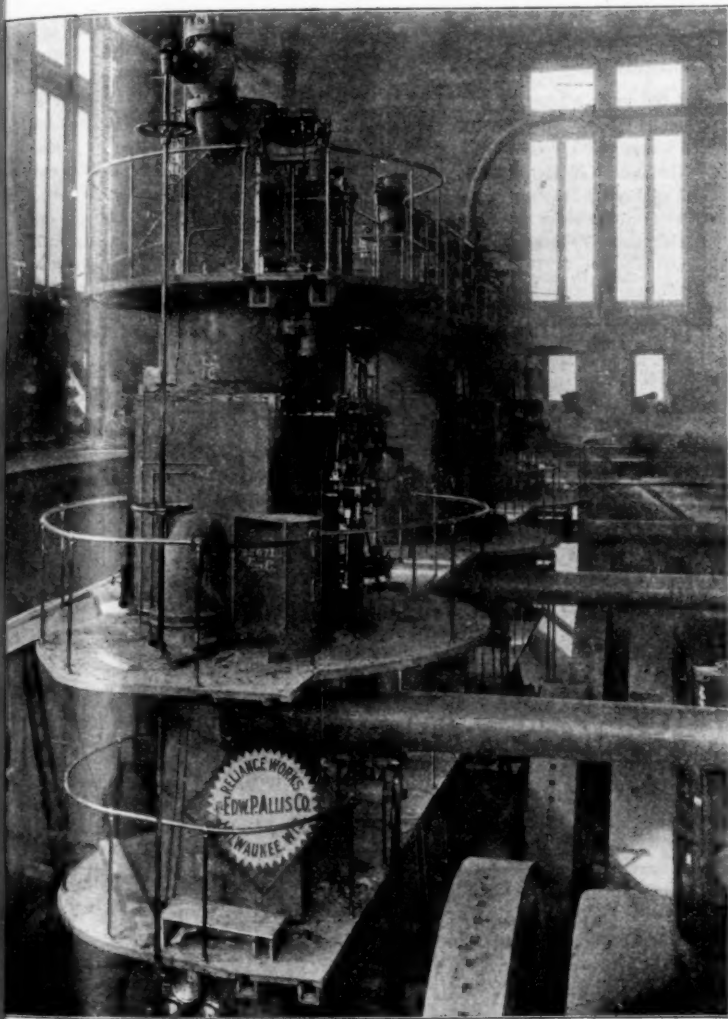
#### Railroad Building in Mexico.

[Special Cor. Manufacturers' Record.]

Monterey, Mexico, March 7.

Since Mr. A. E. Stilwell of the Kansas City, Mexico & Orient Railroad received the concession from the Mexican government to build the road through Mexico he has received concessions for building two more branch roads. These two branches will tap some of the richest mining districts in the republic. The concession for the main line carries with it a bonus of \$9000 per kilometer for the entire line. Since they made the preliminary survey from the city of Chihuahua south the engineers found a considerable portion of the country very mountainous, and that it will cost considerable more to build the road through that part of the country than first reported, and an agent has filed an application with the secretary of communication and public works for an additional bonus of \$3000 for each kilometer for that division. Mr. Stilwell and associates have organized the United States & Mexican Trust Co., with a capital of \$2,500,000, which is to act as trustee of the Orient road and bonds. Mr. Stilwell will be its president, and Mr. Thomas C. Scott of Chicago, vice-president. They will establish offices in the cities of Mexico, Kansas City, Chicago, New York and London. The railroad company, in addition to the money bonus, has received over 1,000,000 acres of land and other valuable mining properties from the Mexican government.

News has been given out that as soon as President Charles Melville Hays of the Southern Pacific makes a tour of inspection of that road and the Mexican International Railway, which is a part of the Southern Pacific system, they will commence work on the Durango division and push it through to Mazatlan, on the Pacific. A good portion of the road is already graded. They will also push the construction of the road from Nogales to Guaymas, on the Gulf of California. The Scott Brothers, who have the contract for



IN THE MACHINE ROOM.

For the distribution of current there have been laid in the principal streets forty-one duct miles of underground conduits, starting from the power-house with 64 ducts, and decreasing to 36, 24, 16, 12 and 10 ducts at most distant points. Four and six-duct conduits in six-foot lengths are used. These ducts will carry at present about 25,000 feet of rubber-covered lead-encased feeders, ranging in size from 250,000 to 600,000 circular mills, although their ultimate capacity will be far in excess of this. The underground mains are Edison tubes, of which thirteen miles have been laid. The overhead feeders, ranging from 250,000 to 500,000 circular mills, aggregate at present about 50,000 feet, and there are also 30,000 feet of overhead mains. The copper used in the distribution of the current thus far aggregates about 355,000 pounds. The cables and wires were furnished by the John A. Roebling Sons Co., Trenton, N. J.

The dam, canal and power-house found-

the location of new industries and increase the demand for power.

By way of conclusion, mere mention of the personnel of the Virginia Electrical Railway & Development Co. may be appropriate, as some well-known names indicate the character of the enterprise. The officers of the company are: President, E. L. Bemiss; vice-president, W. M. Habliston; secretary and treasurer, Everett Waddey; directors, in addition to the above, Joseph Bryan, James D. Crump, J. W. Rothert, F. C. Todd, William Todd, S. W. Travers, John L. Williams, Langbourne M. Williams.

Notwithstanding the numerous striking examples of the efficient power transmission which can be found, more than ordinary interest attaches to this plant in Richmond, because of many conditions which surround it. It has come into existence in a community not especially noted for progressive movements in industrial matters, and has made use of re-



building this road, are pushing construction as rapidly as men and money can do it. They expect in the next few months to have the road open for traffic to Torreon. This company has recently received a concession from the State of Coahuila to build a branch line into a very rich mining district in that State.

During the past three months a large number of railway magnates and others have been in this city. The first of those was E. H. R. Green, president of the Texas Midland Railroad. Mr. Charles Melville Hays, president of the Southern Pacific Railway, and party came in on Sunday morning in a special train of five first-class coaches and spent the day here. Mr. Hays was accompanied by Mr. J. C. Stubbs, third vice-president and traffic manager; Mr. Julius Kruttschnitt, fourth vice-president and general manager; Mr. W. G. Van Vleck, manager Atlantic division, and Mr. J. J. Ryan, superintendent of motive power. They were also accompanied by Mr. L. M. Johnson, general manager of the Mexican International; Mr. C. K. Dunlap, general passenger and traffic agent; Mr. C. A. Hutchinson, trainmaster. The party were on a tour of inspection, and will go over the whole line before they return to their respective homes.

Mr. John J. Valentine, president of the Wells-Fargo Express Co., arrived Monday morning in his private car "San Jose" with a party on a tour of inspection, and will visit all of the principal cities in the republic before he returns to his headquarters in San Francisco, Cal.

Mr. Frank Rockefeller and wife and three daughters and Mrs. W. P. Cowan of Chicago paid the city a visit and spent the day in sightseeing. They are making a tour of the republic, and will go from Mexico to California via El Paso.

Mr. Robert S. Town of New York, president of the Mexican Northern Railroad, the San Luis Potosi smelter, the Mexican Lead Co. and the Monterey Mineral Railroad, spent a few days in the city last week, the guest of Mr. R. L. Kayser, the manager of the Mexican Lead Co. in this city.

#### IN THE BIRMINGHAM DISTRICT.

##### Indications of an Enlarging Market for Iron.

[Special Cor. Manufacturers' Record.]  
Birmingham, Ala., March 19.

The market got its second wind the past week, and was accordingly strong. Those who had been buying added to their purchases, and they were reinforced by the division which had been assaulting the market in the hope of lowering prices. The demand was general, being widely distributed. There was not much buying of foundry irons. A pretty close knowledge of the requirements of the most important buyers is possessed here, and a close watch is kept on their purchases. It is stated on high authority that while these buyers have accepted large contracts for delivery during the year, they have purchased but a comparatively small part of the iron necessary to fulfill them. They have been coming in of late, and on weak spots have absorbed what they could get. The firmness of iron at Western points drew attention to prices here, and there was a rush to get in before this market responded. There were several round lots placed.

There was an absence of small buyers. They, too, must come in, and it is anticipated that when they enter, the volume of trade will be great enough to sustain prices; in fact, so confident is the feeling in regard to it, that it has been semi-officially announced that the price would be advanced another twenty-five cents this week. The advance is more than prob-

able. Early in the week there were a few sales of gray forge a little below \$10.25. But the bulk of the sales were at \$10.25. During the last half of the week the price was advanced to \$10.50, and some sales were made, but none of magnitude. One order for 3000 tons came in at \$10.25 after the advance was determined upon, and it was declined.

No. 2 foundry was in good demand at \$11.25, and when it was advanced to \$11.50 it was still in moderate demand. No. 2 soft sold at same price. But both grades are in light supply, and can be had only in limited quantities. Basic iron is nominal at \$11.50, as none can be had now, the output being sold for months ahead. No. 1 foundry and No. 1 soft are \$12 to \$12.25, while No. 3 foundry is quotable at \$11. The end of March will show a material reduction of stocks in furnace yards, as each interest has looked for shipment this month a much larger tonnage than will be turned out. We are now turning out about all that present facilities will permit, and the effort will be directed to maintain it rather than to increase it.

In steel the reports are exceedingly good. The demand is fine, and greater than the current output of the mill.

There was an important deal closed the past week in coal lands, covering about 4000 acres, and situated near the Underwood holdings, not far from Oneonta. The buyers were Eastern people and local talent. The terms of sale are withheld. The production of coal is estimated at 180,000 tons weekly, and the demand readily absorbs it.

The Southern Cement Works, located at North Birmingham, set its mill to grinding the past week, and is now ready for business.

The Dimmick Pipe Works reports a rush of business, and its order-books are so well filled that it has been compelled to decline business that would be very acceptable to it.

A very good business in sugar machinery is offering from the sugar country.

J. M. K.

#### The Pig-Iron Market.

Matthew Addy & Co. of Cincinnati say in their weekly report:

"There is a steadiness and regularity in the demand for pig-iron that tells in no uncertain way the reason for the increasing strength of the market. There is at the present time no sensational single inquiry before the ironmasters North or South, but there has been booked during the week a great volume of new business. The Southern furnaces have put up their prices another 25 cents, so that No. 2 foundry is now \$11.50 at Birmingham. This advance came as the result of very heavy buying. There is a marked increase in the tonnage of new business for shipment after July. Most of the present inquiries are for shipment over the next six months, but many of them are for deliveries through the balance of the year.

"There has been quite a call for malleable iron this week, and three or four round-lot orders have been booked by Ohio furnaces; in fact, the Ohio merchant furnaces this week have been selling foundry and malleable irons in surprisingly large quantities, and there seems to be no limit to the inquiry. And as we said in our last report, if there had been any more Bessemer obtainable for shipment over the next ninety days, it could have been sold a dozen times over. While all kinds of iron are strong, Bessemer and basic, the steel irons, are by far the strongest in the list.

"The buying that has been done is to cover actual wants. There has not been, to our knowledge, a single speculative

sale to either consumers or outsiders, and this feature of the market is decidedly favorable."

#### West Virginia Coal Lands.

It has been reported that large combinations are forming for the purchase and consolidation of extensive West Virginia coal property. The Charleston Gazette announces that a deal was consummated last Saturday for the purchase of 1300 acres of coal lands in Boone county, and it adds:

"The new purchasers have arranged to open up the coal on the property, and the railroad which has been talked of for some time will be built as soon as practicable. This deal will mean much to this city, as the headquarters of the company will be here and most of the business done here. It is the initiatory step to a still bigger deal that will mean the operating of all the splendid coal properties in Boone county."

#### Will Advertise Richmond.

One of the most attractive expositions of developmental work in the South which has ever been published is a brochure entitled "Richmond's Water-Power." It is descriptive largely of the plant of the Virginia Electrical Railway & Development Co. at Richmond, Va., for the utilization of the water-power of the James river. The description is terse but explicit, and is illustrated with many half-tone engravings. In addition, the publication contains a sketch of the history of Richmond, a description of its present status with reference to its transportation facilities and its commercial and manufacturing interests, and a map of the city. It is printed by the Everett Waddey Co. of Richmond, and as a piece of typographic art and broad and liberal treatment of valuable facts it is an excellent advertisement of the city.

#### Proposed Galveston Elevator.

A party of Galveston shippers recently visited New Orleans to inspect the elevators in that city. According to a statement of Mr. John E. Bailey of Galveston, the question of another elevator in that city is being considered, which will have a capacity of at least 1,000,000 bushels.

#### Brunswick to Cuba.

The announcement is made that the Cuban Commercial Co. may establish a line of vessels between Brunswick, Ga., and several Cuban ports. Frank D. Aiken of the Brunswick Board of Trade has been agitating the project.

The Unity Cotton Mills, C. V. Truitt, president, La Grange, Ga., which began the construction of its buildings in November, 1900, is rapidly approaching completion and will be ready for machinery about May 15. Ten thousand spindles and 225 looms will be installed and 175 operatives employed. The product will be medium-weight duck, drills and osnaburgs. The company owns 100 acres of land adjoining its mill, and will lay out a model town for its operatives, constructing from fifty to seventy-five dwellings. About one-half of the machinery orders has been placed, and it is expected to have the mill in operation by November or December of the present year. Mill and dwellings were designed by A. F. Walker of Atlanta, and the construction has been under the charge of Roy Dallis, civil engineer, of La Grange.

The sales in the Joplin (Mo.) district during the week ended March 16 were 10,681,610 pounds of zinc ore and 2,000,900 pounds of lead ore, valued in all at \$175,196.

## RAILROADS.

[A complete record of all new railroad building in the South will be found in the Construction Department.]

#### From West Virginia to Tidewater.

New York dispatches are to the effect that arrangements have been made to complete the line projected several years ago from a point on Chesapeake bay to the West Virginia coal fields. As readers of the Manufacturers' Record are aware, the Chesapeake & Western, built by Mr. J. W. Rinehart and associates between Elkton and Bridgewater, Va., was intended to terminate at the coal fields and on tidewater. Recently the Alleghany & Chesapeake Railway Co. has been chartered in West Virginia, and it is understood that this company will include the Chesapeake & Western, also the Potomac, Fredericksburg & Piedmont, a narrow-gauge line extending between Orange and Fredericksburg, Va., a distance of thirty-eight miles. The western terminus of this road is nearly east of the Chesapeake & Western. Extensions would be required to be built from Fredericksburg to Chesapeake bay, from Orange to Elkton and from Bridgewater to Davis, W. Va., where connection would be made with the West Virginia Central & Pittsburgh Railroad. In connection with the plans it is reported that Messrs. August Belmont & Co., also Frederick A. Stokes & Co., both well-known banking houses of New York, have taken up the project.

#### Important Missouri Project.

A company has recently been organized to build a line in Missouri, which will penetrate the coal deposits in Morgan county. It is termed the Springfield, Jefferson City & Chicago Railway Co., and is composed of Iowa and Missouri parties. Mr. William Woodburn of Des Moines, Iowa, president of the company, informs the Manufacturers' Record that the line will be built between Jefferson City or some point on the Missouri river and Springfield, an estimated distance of 160 miles, with branches which will make the total mileage 275. He states that the southern portion of the road will pass through a territory which at present has no railroad facilities. Surveys are now being made, and it is calculated to complete the main portion during the next year. C. B. Adams is vice-president; J. K. Moller, secretary and treasurer, and J. G. Briggs, general manager, of the company.

#### Texas Lumber Lines.

The importance of railroads constructed in Texas for lumbering purposes was shown at a recent hearing of the State railroad commissioners. The railroad companies represented included the Warren & Corsicana Pacific, seventeen miles in length; the Texas & Louisiana, fourteen miles in length; Emporia & Gulf, twenty-five miles in length; Angelina & Neches River Railroad, ten miles in length. They represent but a few of what are termed lumber roads in the State, yet 250 cars and twenty locomotives are being operated upon them, and, as the testimony before the railroad commission showed, they have been instrumental in the location of a large number of manufacturing enterprises of various kinds in the territory which they reach. Most of the companies have plans for extensions during the present year which will considerably add to the mileage.

#### Railroad Expansion in Mississippi.

An indication of the expansion of the Gulf & Ship Island Railroad is furnished in a recent statement made by Mr. S. S.



Bullis, general manager of the company. Within eighteen months the company has built 180 miles of extension, reaching Jackson, Laurel, Columbia and other important towns in the State, and 250 miles of road are being operated, upon which are over eighty saw-mills. The lumber traffic alone amounts to about 2000 carloads daily, of which a large quantity is shipped to Gulfport to be loaded on vessels in the foreign and domestic trade. Improvements are now being made to the Gulfport harbor which will give a ship channel twenty-three feet in depth.

Although the Gulf & Ship Island is a comparatively new road, such is the extent of business that the company has decided to relay the entire line with 75-pound rails.

#### Terminals at Brunswick.

Recent sales of stock of the Brunswick Dock & Improvement Co., which controls a large frontage on tidewater at Brunswick, Ga., are said to be in the interest of the syndicate which is interested in the Brunswick & Birmingham Railroad, of which Mr. E. C. Machen is president. The Manufacturers' Record has received a confirmation of the report that the Knickerbocker Trust Co. of New York is trustee for a bond issue amounting to \$6,750,000 to finance the railroad. The Brunswick Company controls five miles of water front having a depth of from twenty-seven to thirty feet, with nearly 1200 acres of land suitable for warehouses, elevators, etc. According to the statement of a stockholder of the dock company, the Brunswick & Birmingham Railroad Co. has arranged to secure one mile of the water front for terminals.

#### Another Mississippi Project.

Michigan lumbermen have become interested in a very important railroad project in Southeastern Mississippi. It is understood that they propose building a line 100 miles in length, which will reach the towns of Meridian, West Pascagoula and Ocean Springs, traversing Jackson, Harrison, Wayne, Lauderdale and adjacent counties, which contain extensive tracts of pine timber. It is stated that the railroad promoters have secured a large quantity of the timber lands, and that the railroad is intended to reach it. Its northern terminus will be at Meridian, where connection will be made with the New Orleans & Northeastern and the Mobile & Ohio systems. The Danaher & Melendy Lumber Co. of Dollarville, Mich., is reported as among those interested.

#### A 350-Mile Line.

In a letter to the Manufacturers' Record Mr. J. H. Brewster of Cherryvale, Kans., president of the Kansas, Eastern Oklahoma & Texas Railroad Co., writes that surveys are now being made for the road, which is to extend from Cherryvale to Henrietta, Texas, through portions of Indian and Oklahoma Territories, a distance of 350 miles. At Cherryvale connection is made with the Santa Fe, also the St. Louis & San Francisco systems, while at Henrietta the road will form a junction with the Missouri, Kansas & Texas and the Fort Worth & Denver City systems. The other officers of the company are J. Burkholder, president; G. W. Hall, secretary; G. W. Canfield, treasurer, and Henry Hudson, general manager.

#### Coastwise Steamship Traffic.

Reports received from the principal steamship companies having service between New York and Southern ports show that the freight traffic at present is very large. Southbound freight includes dry

goods, boots and shoes, while shipments from Southern ports include fruit, vegetables, tobacco and some cotton. The Morgan Line of steamships is carrying a considerable quantity of copper and lead, also raw sugar from the Sandwich Islands, which is forwarded by rail from the Pacific coast to Galveston and New Orleans. The Clyde Steamship Co. will have two additional vessels in service within the next year, one of which will be placed in commission in June.

#### New Maryland Project.

In connection with the project to build an electric railroad between Elkton and Chesapeake City, Md., the idea of extending the road along the Eastern Shore of Chesapeake bay to terminate at Chestertown or some point in its vicinity has been conceived. Mr. Peter J. Ford, president of the Economic Insurance Co. of Wilmington, Del., has become interested in the matter, and it is understood Messrs. Deegan & Co. of Philadelphia, who are building the road between Elkton and Chesapeake City, are also encouraging it. In a letter to the Manufacturers' Record Mr. Ford writes that the plans are under consideration, but as yet have not fully matured.

#### Sale of a Georgia Road.

It is officially announced that the Central of Georgia Railroad Co. has secured control of the Chattanooga, Rome & Southern, paying \$4,500,000 for it. The property purchased represents 138 miles of line, extending from Chattanooga, Tenn., to Carrollton, Ga. At Carrollton connection is made with the main line of the Central. By its acquisition the Central of Georgia will have an entrance into Chattanooga and reach a very important traffic territory in North and West Georgia which has hitherto been closed to it.

#### New Florida Line.

Mr. J. E. Starke, president of the company promoting a railroad between Jacksonville and Jesup, Fla., confirms the recent report in the Manufacturers' Record that it will be about 100 miles in length. Mr. Starke writes that construction is to begin during April, and it is proposed to complete the road within the next year. Roland Woodward is chief engineer. W. H. Whaley is secretary and treasurer, and W. A. Hawkins, vice-president and general counsel.

#### Missouri Pacific Improvements.

A feature of the annual report of the Missouri Pacific Railway Co. was the amount appropriated for betterments. During the year under consideration arrangements were made to purchase eighty locomotives and 4000 freight cars, while 139 miles of track were relaid with 75-pound rails and the roadbed rebuilt to a considerable extent. Thirty-four miles of sidings were constructed, and sixty-five miles of track ballasted and reballasted.

#### St. Louis & San Francisco Extension.

The formal announcement is made that the extension of the St. Louis & San Francisco system between Sapulpa, I. T., and Denison, Texas, is ready for operation. Train service has been established between the towns mentioned, and arrangements have been made to enter Sherman, Texas, over the tracks of the Houston & Texas Central. The extension is 175 miles in length.

#### Southern Pacific in Mexico.

It is reported on good authority that the present management of the Southern Pacific Railway has determined to have closer relations with Mexico, and that it

will probably obtain concessions to build several branches. One will extend to Mazatlan, a port on the Pacific coast of Mexico, while another branch will be 127 miles in length, traversing portions of the State of Sonora.

#### Union Springs & Northern.

W. M. Blount, president of the Union Springs & Northern Railroad Co., writes that the road is to be built at once, and the company is ready to receive proposals for material and equipment. It is projected from Union Springs to Fort Davis, Ala. The company includes local bankers and business men of Union Springs. G. B. Myles is secretary.

#### Railroad Notes.

The San Antonio Traction Co. of San Antonio, Texas, has recently purchased a quantity of additional rolling stock, and is making extensive improvements to its trolley system in the city and suburbs.

A correspondent of the Manufacturers' Record writes that an excellent opportunity is offered to start railroad promoters to build a line between Decatur and New Decatur, Ala. It is his opinion that a line properly operated will prove an excellent investment.

A letter from Messrs. Scott & Stringfellow, bankers and brokers of Richmond, Va., estimates that the earnings of the Chesapeake & Ohio Railroad through coal traffic for the first nine weeks of 1901 were \$828,251, an increase over the same period last year of \$350,224.

The financial condition of the Central of Georgia Railway Co. has evoked much favorable comment in New York and other cities. In a recent article on the subject the Philadelphia Stockholder refers to the advance in the securities of the system and its excellent connections for through business.

The Georgetown & Western Railroad Co., at its recent meeting at Georgetown, S. C., elected F. S. Farr, president, and E. B. Freeman, general manager. The company is making a number of improvements to the railroad, which includes the relaying of a portion of the track with heavier rails and the building of sidings.

The Missouri Pacific Railway Co. has recently issued a pamphlet giving the correct population of the various communities in the States and territories reached by its line. The statistics also include populations of the various States and the percentage of increase over 1890. For reference the pamphlet is very valuable.

#### Additional Terminals.

A New Orleans dispatch is to the effect that the Louisville & Nashville Railroad Co. has decided to make a number of additional improvements in that city. One is the erection of a freight shed on the river front, which will be large enough to accommodate several hundred cars. Plans are now being prepared for the structure.

Plans have been completed, it is announced, by the Illinois Central Railroad Co. for the elevator which may be constructed at New Orleans. It will have a capacity of 1,500,000 bushels, and, including the wharves to be built in connection with it on the river front, will cost about \$500,000. With the new elevator the Illinois Central will have storage capacity in New Orleans and suburbs for 3,500,000 bushels.

Recent reports indicate that American manufacturers are securing a foothold in Smyrna for the sale of cotton goods, supplanting British manufacturers in that market. Prints and white goods made in this country have had an extensive sale in Smyrna.

## TEXTILES.

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the Manufacturers' Record. We shall be glad to have such matter at all times, and also to have any general discussion relating to cotton matters.

#### COTTON GINNED IN ONE YEAR.

Interesting Features of a Census Manufacturing Bulletin.

Bulletin No. 58 of the twelfth census contains a report on the quantity of cotton ginned of the crop of 1899. The report has been prepared by Mr. Daniel C. Roper of South Carolina, and gives by States and counties the statistics of the gross weight in pounds, the number of commercial bales, both square and round, and their equivalents in 500-pound bales, and the average cost per bale for ginning and baling. The statistics show a total of 4,672,695,500 pounds of cotton ginned, equivalent to 9,345,391 bales of 500 pounds each. The report says that cotton ginneries are divisible into three general classes, namely, those conducted exclusively for the plantation, those conducted exclusively for the public, and those conducted for both the public and the plantation. From Arkansas, Indian Territory, Missouri, Oklahoma, Tennessee and Texas ninety-one establishments report merchant ginning; these have been classed as public ginneries, inasmuch as their owners do not grow cotton, but purchase it as it comes from the fields and gin the same for their own accounts.

The rapidity with which the private or plantation ginneries have been supplanted by public and more modern equipments is noteworthy. Through inquiries of the census of 1880, covering the power and machinery of cotton-ginning establishments, it was ascertained that a large percentage of the crop of 1879 was handled by ginneries of a strictly private character. The motive power of these ginning and baling plants consisted of horses or mules, and such had a daily capacity of from three to five bales. They were simple and inexpensive in their construction, suited only for limited purposes. The general introduction of steam-power brought economic methods that have crowded out primitive horse ginneries to such an extent that they are now curiosities. There are in the United States 20,620 cotton ginneries, of which 2863, or less than 10 per cent., are reported as ginning exclusively for the plantation. A very small percentage of these plantation establishments are of the old-fashioned horse-power variety.

The following table gives the statistics of the ginning establishments:

States and Territories.	Total.	Operated for the public only.	Operated for the plantation only.	Both.
Alabama.....	4,034	792	291	2,851
Arkansas.....	2,630	668	133	1,829
Florida.....	236	73	10	153
Georgia.....	4,729	696	572	3,461
Indian Ter.....	297	215	6	76
Kansas.....	2	1	..	1
Kentucky.....	2	1	..	1
Louisiana.....	2,148	190	261	1,697
Mississippi.....	3,976	519	580	2,877
Missouri.....	56	40	..	16
N. Carolina.....	2,573	431	278	1,864
Oklahoma.....	133	109	..	24
S. Carolina.....	3,368	298	381	2,689
Tennessee.....	834	255	46	534
Texas.....	4,514	2,165	100	2,249
Virginia.....	88	15	6	67
Total.....	29,620	6,463	2,863	20,299

#### The Cotton Movement.

In his report for March 15 Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight during 1900

days of the present season was 8,585,479 bales, an increase over the same period last year of 553,450 bales; exports were 4,708,974 bales, an increase of 371,196; takings by Northern spinners 1,600,787 bales, a decrease of 402,667; by Southern spinners 900,556, a decrease of 29,239.

#### Textile Notes.

The Pepperton Cotton Mills of Jackson, Ga., is installing an electric-light plant.

It is said that a cotton mill to employ 500 operatives is a probability for Lexington, N. C.

D. A. Hudson is said to be interested in the establishment of a new cotton mill at Gaylesville, Ala.

The Worth Manufacturing Co. of Worthville, N. C., has purchased and will operate the Engleworth Mills.

The Town Creek Woolen Mills at Winchester, Tenn., has been burned, causing a loss on mill and machinery of about \$12,000.

J. D. Moore and J. D. White of Gastonia, N. C., are said to be interested in the erection of a 6000-spindle mill at Dallas, N. C.

The board of directors of the Winchester (Va.) Woolen Mills has decided to purchase \$10,000 worth of new machinery for the manufacture of the finest grades of woolsens.

I. N. Dodson, Danville, Va., contemplates organizing a company for the manufacture of woolen blankets, and desires information relative to capacity, cost, character of machines, etc.

V. D. Molloy, John D. Askew, Joseph Bell, James Donohue, John W. Steen and others are organizing a stock company, with capital of \$30,000, for the establishment of a knitting mill at Columbus, Miss.

The Celeste Cotton Mills, organized for the establishment of a 3500-spindle mill at Celeste, Texas, has been incorporated, with capital stock of \$60,000, by J. A. Smith, J. T. Harrell, B. F. Adams, H. E. Jones and J. E. Chiles.

J. D. Moore of Gastonia, N. C., is said to be in correspondence with M. M. Courtney of Lenoir, N. C., relative to the establishment of a cotton mill at Lenoir. Mr. Moore will put \$40,000 into a new mill, provided the citizens of Lenoir will subscribe \$35,000.

The cotton-mill company at Paris, Texas, has completed its organization and will apply for charter. Capital stock will be \$150,000, of which amount \$110,000 has been subscribed. Among the directors elected are R. F. Scott, F. R. Fenet, H. W. Lightfoot, J. W. Haden and H. H. Kirkpatrick.

The Proximity Manufacturing Co. of Greensboro, N. C., proposes to furnish educational facilities for the children of the operatives in its mill, and has let contract for the erection of a two-story frame school building, the first floor to have a seating capacity of 400 pupils, and the second story to be used for a public hall.

The Gonzales (Texas) Cotton Mills, J. P. Randle, president, is asking estimates on a steam-power plant and will open bids April 16, after which it will award contracts for the other equipment necessary to complete plant. Progress is being made on erection of its buildings, which, it is expected, will be completed August 1.

The Elizabeth Mills of Charlotte, N. C., has applied for charter, with capital stock of \$100,000, and privilege of increasing to \$250,000, and will begin the erection of its proposed mill at Millerton, about two miles from Charlotte; company will manufacture cotton, wool and silk into yarn, thread, cloth and other fabrics. John W.

Miller, Vinton Liddell and R. M. Miller, Jr., are the incorporators.

The Standard Cotton Mills of Cedar-town, Ga., manufacturer of hosiery yarns, using mule spindles, advises the Manufacturers' Record that as soon as good weather is certain it proposes to double its plant by increasing its capacity to 12,500 spindles. It is expected that work upon the new building will commence during latter part of April or first of May.

The machinery of the Vesta Cotton Mill of Charleston, S. C., of which J. H. Montgomery of Spartanburg is president, is being removed to Gainesville, Ga., it having been decided, as recently stated, to abandon the Vesta Mill, which was operated with negro hands. The machinery will be installed in the new plant of the Gainesville Manufacturing Co., which is now under construction at that point.

#### QUOTATIONS OF COTTON YARNS.

By Buckingham & Paulson, New York, Philadelphia and Chicago, March 19.

No. 10s-1 and 12s-1 warps.....	13 @13 1/2
No. 14s-1 warps.....	13 1/2 @13 1/2
No. 16s-1 warps.....	14 @14 1/2
No. 20s-1 warps.....	14 1/2 @15
No. 22s-1 warps.....	15 @15 1/2
No. 26s-1 warps.....	16 @16 1/2
No. 6s to 10s bunch yarn.....	13 @13 1/2
No. 12s-1.....	13 1/2 @13 1/2
No. 14s-1.....	14 @14 1/2
No. 16s-1.....	14 1/2 @15
No. 20s-1.....	15 @15 1/2
No. 22s-1.....	15 1/2 @16
No. 26s-1.....	16 @16 1/2
No. 8s-2 ply soft yarn.....	13 1/2 @13 1/2
No. 10s-2 ply soft yarn.....	14 @14 1/2
No. 8s-2 ply hard.....	13 1/2 @13 1/2
No. 10s-2 ply hard.....	14 @14 1/2
No. 12s-2 ply.....	14 1/2 @15
No. 14s-2 ply.....	15 @15 1/2
No. 16s-2 ply.....	15 1/2 @16
No. 20s-2 ply.....	16 @16 1/2
No. 22s-2 ply.....	16 1/2 @17
No. 26s-2 ply.....	17 @17 1/2
No. 8s-3, 4 and 5 ply.....	13 @13 1/2
No. 20s-2 ply chain warps.....	15 @15 1/2
No. 24s-2 ply chain warps.....	16 @16 1/2
No. 26s-2 ply chain warps.....	16 1/2 @17
No. 30s-2 ply chain warps.....	17 @17 1/2
No. 16s-3 ply hard twist.....	14 @14 1/2
No. 20s-3 ply hard twist.....	15 @15 1/2
No. 26s-3 ply hard twist.....	16 @16 1/2

Market dull; prices nominal.

#### Cottonseed at Memphis.

[Special Cor. Manufacturers' Record.]  
Memphis, Tenn., March 18.

Quotations on cottonseed and cottonseed products, as posted on the Memphis Cotton Exchange on the 18th, were as follows: Cottonseed, bulk, rail or wagon, \$11 per ton; river, \$12; oil, carload lots, per gallon, prime crude, 23 1/2 cents; off crude, 22 cents; prime summer yellow, 27 1/2 cents; choice cooking summer yellow, 40 cents; meal, 100-ton lots, per short ton, choice, \$18.25 to \$18.50; prime, \$18 to \$18.25; off, \$16.50 to \$17; cake, in similar quantities, choice, \$18.75; prime, \$18.25 to \$18.50; off, nominal; linters, No. 1, nominal; No. 2, 3% to 3 1/2 cents per pound. The demand for meal and cake for future delivery is fair, with a good volume of orders coming forward from the continent, and with prices stiffening somewhat. The demand for oil is good, though there is little offering, and prices are stiffening, an advance of 1 to 1 1/2 cents having been scored during the week as a result of the better export inquiry and the disposition of holders to withdraw their offerings where bids are not satisfactory.

#### Cottonseed-Oil Notes.

The Farmers' Cotton Oil Co. of Brandon, Texas, has been chartered, with a capital stock of \$50,000. The incorporators are G. L. White, J. T. Frazier and H. N. Tinker, all of Brandon.

The market for cottonseed oil in New York on Monday last opened dull and nominal in the absence of buyers and sellers. At the close on Tuesday, for prime summer yellow 32 cents was bid and 32 1/2 cents asked for all deliveries; crude in barrels was held at 30 cents, and off crude at 28 1/2 cents.

The Camden Cottonseed Oil Co. of Camden, Ark., has been incorporated, with a capital stock of \$50,000, of which \$26,000 has been subscribed. The officers are W. W. Brown, president; S. B. Proctor, vice-president; A. L. Morgan, secretary, and W. K. Ramsey, treasurer.

The Houston Post of Houston, Texas, quotes cottonseed products as follows: Prime crude oil, loose, 23 to 24 cents, and prime summer yellow oil 26 to 26 1/2 cents f. o. b. mill at interior points; linters, per pound, 3 to 3 1/2 cents; hulls, baled, \$4 per ton; cottonseed cake and meal, \$21 to \$21.25 delivered in Galveston; cottonseed at stations, \$11 to \$12 per ton.

The following are official quotations on cottonseed and cottonseed products as posted at the New Orleans Cotton Exchange on the 19th inst.: Prime refined oil, in barrels, 29 cents per gallon; off refined oil, in barrels, 28 cents per gallon; prime crude oil, loose, 23 cents per gallon; prime cottonseed cake, \$22.25 to \$22.50 per ton of 2240 pounds; off do., nominal; prime cottonseed meal, \$22.25 to \$22.50 per ton of 2240 pounds; off do., nominal; soap stock, 1.1 cents per pound; linters; per pound, choice, 4 1/2 cents; A, 3 1/2 cents; B, 3 1/2 cents; C, 3 1/2 cents; cottonseed in sacks delivered in New Orleans, \$14 per ton of 2000 pounds; in bulk, delivered in New Orleans, \$13 per ton of 2000 pounds.

#### A Broad Educational Policy.

An institution which has contributed to the reputation of Baltimore as an educational center is what is known as the University School for Boys. Opened in September, 1880, it has played an important part in the preparation of a large number of students for the principal universities of the country, its graduates being notable for the high percentage attained in examinations. During its existence the school has prepared more than 300 boys for entrance to Johns Hopkins and other universities and scientific schools, including Harvard, Yale, Princeton, the University of Virginia, the University of Pennsylvania, Haverford, Swarthmore, Cornell, Lehigh, the Massachusetts Institute of Technology, the Stevens Institute of Technology, the Troy Polytechnic and the United States Naval Academy. In June, 1900, it had successful candidates at seven different universities and scientific schools. Mr. W. S. Marston, the principal, has followed out a very broad policy, and the results obtained have been extremely gratifying in every respect. While the curriculum includes mathematics, classics, modern languages and science, especial attention has also been paid to the development of the body, and the physical training given the pupils is such as to build them up in harmony with their intellectual development.

The buildings, which were constructed under the supervision of Mr. Marston, are notable for the light and ventilation of the various apartments and the many arrangements for the comfort and health of the students. They are practically fireproof. The gymnasium is equipped with a complete set of modern apparatus, as well as lockers, hot and cold baths, etc. The corps of instructors have a wide reputation in their respective studies. The students at the University School include boys as young as seven years of age, for whom a primary department is especially arranged, while special preparatory courses for the university are also provided.

Thirty-five carloads of cypress lumber from Harney, Fla., were received at Tampa last week and immediately loaded on vessels at Port Tampa.

## LUMBER.

[A complete record of new mills and building operations in the South will be found in the Construction Department.]

### LUMBER MARKET REVIEWS.

#### Baltimore.

Office Manufacturers' Record,  
Baltimore, Md., March 20.

The lumber market during the past week has been moderately active, and the demand somewhat more pronounced in certain cases. The weather has been much better for handling lumber, and dealers are more encouraged by the outlook. The movement in North Carolina pine is active, and the domestic demand is improving. There is some foreign demand, but shipments are generally light. Common grades are not sought after, but for the better grades the market is strong. A number of foreign inquiries are to hand, Georgia pine is strong, with a fair selling price for all desirable lumber. White pine is steady, with a fair offering, and values unchanged. The hardwood industry is looking up, and in oak, ash, poplar and other woods there is a better inquiry. Stocks of dry lumber are still reported light at all the mills. The foreign export trade in hardwoods is quiet, with a very light list of shipments for the week. European advices are not so encouraging, and shippers not anxious to enlarge their operations under present conditions.

#### Norfolk.

[From our own Correspondent.]  
Norfolk, Va., March 18.

The situation throughout the various departments of the lumber industry in this section shows a more substantial character with the opening of spring. The movement, while not unusually active, indicates a steady trade during April, while the demand from Northern and Eastern centers shows up much better than for the past thirty days. An unusual amount of building operations in the interior towns of New England is reported, and as the weather grows milder a large amount of lumber will go into consumption in these sections. Buyers from the North and East are making numerous inquiries, and considerable actual business will be developed during the spring and summer months. North Carolina pine is reported in good shape, both as to prices and tone of the market. At a meeting of the North Carolina Pine Association last week at Old Point reports from twenty-five of the largest firms of the association were submitted, all of which presented most favorable conditions. It is stated that the stock on hand at present amounts to about 60,000,000 feet of lumber, which is considered quite small for this period of the season. The officers of the association for the ensuing year were elected at this meeting as follows: Capt. John L. Roper, president; E. C. Fosberg, vice-president; C. S. Russell, secretary, and R. S. Cohn, treasurer. The demand is generally for the upper grades, Nos. 1 and 2, of which there is a scarcity. The market for dressed lumber is active, and all the planing mills here and at adjacent points are crowded with orders. The foreign demand for North Carolina pine is improving, and numerous inquiries are at hand, almost every mail bringing fresh orders. The demand for lumber for building purposes is considerable, building going on in nearly all suburban sections. Shipments of timber, both by rail and water, have been good during the past week, but with cars more plentiful much more lumber could be shipped. Freight rates on lumber continue unchanged, \$2.50 to \$2.60 to New York and Sound ports, and \$3 to \$3.50 to Boston and eastward. The



schooner Bessie C. Beach was chartered last week to load lumber here for Norwich, Conn., at \$2.75, option Noank \$2.80.

#### Charleston.

[From our own Correspondent.]

Charleston, S. C., March 18.

A steady demand for desirable grades of lumber has characterized the market so far during the present month, and the volume of trade at this and adjacent milling points is better. The yellow-pine and cypress business has opened up well, and there is every indication of a good spring and summer trade. In the development of hardwood timber tracts there is considerable activity, and the present year will likely be notable for some extensive enterprises in the manufacture of hardwood lumber and the establishment of woodworking concerns in this section of the State. The business of the past week has been moderate, and shipments of lumber were as follows: Schooner James D. Dewell for Philadelphia with 486,000 feet, schooner Susie H. Davidson with 475,000 feet and steamer Iroquois with 47,750 feet. The total shipments of lumber for the season amounts to 29,661,087 feet, against 28,687,153 feet last season. At Georgetown everything in the lumber line is active, and mills are running at their full capacity, with shipments liberal. Prices for lumber are generally firm, with a hardening tendency, and stocks ample for the demand.

#### Savannah.

[From our own Correspondent.]

Savannah, Ga., March 18.

The conditions surrounding the local lumber market are at the moment very satisfactory, and manufacturers and dealers generally anticipate a very substantial spring trade. At nearby ports the movement shows up much better than last month, and shipments by both rail and water are of greater volume. Saw-mills everywhere in Southern Georgia are making good time and turning out lumber in greater quantities than ever before in the history of the industry. On Saturday last the market here closed steady, with quotations f. o. b. vessel as follows: Sawnties, \$8 per 1000 feet; hewn ties, 7x9x8½, 25 cents each; minimum easy size yard stock, \$10 to \$10.50; car sills, \$12; stock 14x16 inch, depending on lengths, \$13 to \$15; ship stock, \$16. The shipments of lumber last week aggregated about 2,500,000 feet, and there are charters of vessels reported to load during the month over 3,000,000 feet of lumber. Freights are still very steady, and rates are unchanged. Charters reported on Saturday were schooner Madeline Cooney, 695 tons, from St. Simons to New York with lumber at \$4.75, and schooner Rebecca J. Moulton, 527 tons, from Savannah to New York with lumber at \$5.

#### Mobile.

[From our own Correspondent.]

Mobile, Ala., March 18.

A fairly active distribution has been the rule during the week in local and nearby saw-mill sections, and the lumber market continues fairly steady, with a good demand. At the last meeting of the Gulf Coast Lumbermen's Association it was stated that the interior demand for lumber was prodigious, and an urgent demand from car factories, which has a tendency to keep down stocks. For 11-inch and up prime and heart face 4s and 6s are in active demand for export, with prices firm and advancing. The lower grades of lumber are a shade easier as to prices. As to timber the market is still quiet, with prices for sawn timber somewhat improved, 11 to 11½ cents per cubic foot being the present figure, while hewn timber is still quoted at 13½ to 14 cents per cubic foot. European advices give

very little encouragement in regard to the future of the pitch-pine market, and at present there are no indications of immediate improvement. The London Timber Trades Journal of the 9th inst., in regard to the pitch-pine timber trade, says: "The downward tendency in sawn pitch pine has been a noticeable feature of late. This, of course, is mainly the result of lower freights, and any reaction in favor of higher freights would produce a corresponding increase in the c. i. f. price. As an indication of present values, we may say that for a cargo of 30 feet average, Mobile timber, per 1500 register steamer for prompt loading, 48s. is asked to west coast. Judging from the number of charters concluded, the fall in value appears to have lent some stimulus to the demand." Lumber and timber freights are about steady, recent charters being made as follows: A British ship, 1289 tons, from Mobile to Montevideo or Buenos Ayres with lumber at \$14; the Italian bark Pieta, 909 tons, from the Gulf to Buenos Ayres with lumber at \$14.25, and British steamer Miramar, 1561 tons, from Mobile to Cardiff with timber at 100/3, March.

#### Memphis.

[From our own Correspondent.]

Memphis, Tenn., March 18.

There has been an average volume of orders coming forward in lumber circles during the week, but there has not been that improvement which was confidently expected some days ago. The domestic trade, on the one hand, has been checked to some extent by the bad weather in the North and Northwest, which has put a stop largely to all building operations of importance, while there has been no improvement whatever in the export business on the other, as a result of the large commission shipments to foreign importing centers. The best business is that which comes from the domestic trade. This continues to come in steadily in sufficient volume to busy all the mills that are in operation, representing from 60 to 65 per cent. of all those of this district. But notwithstanding the fact that business is somewhat quiet, there has been a gradual hardening of prices, and most of the dealers have made open advances within the past few days. The trade is now quoting the following prices: Plain red oak, \$28 to \$30; quartered, \$42 to 45; white oak, plain, \$30 to \$32.50; quartered, \$45 to \$48.50; cottonwood, \$28 to \$30; gum, \$26 to \$28. The demand is pretty well distributed throughout the list, though the oaks and gum are in best inquiry from the export trade. The export market on the latter, however, is somewhat flat, with some of the lumbermen reporting a small volume of business coming forward. Prices, as a rule, are firm all around, especially to the domestic trade, with a hardening tendency, and the hardwood men think it only a question of a short time until still higher values will rule in the open market. The mills along the rivers have plenty of logs to last them for some time to come, while those that depend upon the railroads and have to haul their timber considerable distances have small stocks, and will be in a rather bad way on this account if there is any hard weather ahead before spring comes in reality. There was a good rainfall during the week, and the rivers are gradually rising, and give promise of abundant water for rafting in a few days. This leaves the river mills in most excellent shape. But what helped the latter has rather operated against the former in further cutting off their supply. But with fair weather the hardwood men are all confident of enough timber to enable them to fill all orders that may come forward. In the local trade good business

has been the record. There is still a large amount of building going forward, larger than usual at this season, because of the openness of the weather. Work will be begun this week on a number of new buildings, which will keep the retail trade well supplied with orders. Prices are firm as a rule, with little, if any, concession obtainable. While business among the hardwood men has not been what was expected, the feeling is general that it will be only a few more weeks until it will be running fully abreast with that of one year ago. The dealers here, without exception, are looking for large things during April.

#### Lumber Notes.

It is stated that D. C. Cole & Co. of Kennett, Mo., will locate a lumber and general woodworking factory at Pine Bluff, Ark.

For the week ending March 17 there was shipped from Petersburg, Va., to Baltimore and Philadelphia by vessel over 1,500,000 feet of lumber.

The steamer Irada cleared last week from Galveston, Texas, with 300,000 feet of lumber for a European port. The shipment was made by F. E. H. Newcombe of Lake Charles, La.

Receipts of lumber at the port of New Orleans for the week ending the 15th inst. amounted to 2,341,000 feet, and for the season to 75,117,921 feet, against 60,026,274 feet last year.

Kendall & Deeter of Meyersdale, Pa., have just concluded the purchase of a big tract of timber lying partly in Somerset county, Pennsylvania, and partly in Garrett county, Maryland.

The Cherokee Lumber Co. of Longview, Gregg county, Texas, has been chartered, with a capital stock of \$5000. The incorporators are W. F. Young, E. C. Taylor, R. R. Chaney and others.

The Clarksville Lumber Co. of Clarksville, Texas, has been chartered, with a capital stock of \$20,000. The incorporators are J. P. Lassiter, J. V. Trigg, C. Hocker, R. G. Scott and J. R. Cook.

The J. G. Brill Co., car builder of Philadelphia, has a representative in the Savannah market investigating the quality of Georgia pine for manufacturing best grades, and last week made some considerable purchases of Georgia pine in Savannah.

The lumber company recently incorporated at Belton, Texas, will be known as the Belton Lumber Co., with the following representative business men as its officers: T. W. Cochran, president; Peter Hammersmith, vice-president, and J. H. James, secretary and treasurer.

The Standard Hoop Co. of Fayetteville, Tenn., with a capital stock of \$5000, has been chartered and will commence at once to manufacture barrel heads, hoops and staves. The incorporators are Jos. J. Roach, president; Charles Horms, vice-president; J. Mack Eakin, secretary and treasurer.

The J. M. Card Lumber Co. of Chattanooga, Tenn., is about to make some improvement to its plant in that city. The company has decided to put in saws at the yards in Chattanooga, and will build a new platform 200 feet in length. The company is now making a shipment of pine to Bremen, Germany, making the entire cargo of a special vessel chartered for the purpose.

The Powell Lumber & Mining Co. is the style of a new corporation recently chartered at Crossville, Tenn. The capital stock of the company is \$100,000, with all the stock paid in. The company owns some valuable timber and coal lands,

which will shortly be developed. The officers of the company are R. W. Powell, president; H. G. Dunbar, vice-president; J. W. Horton, treasurer, and M. A. Powell, secretary.

It is stated that the E. H. Barnes Co. of New York is establishing a new enterprise at Wilmington, N. C. It is a plant to manufacture shooks or knock-down wooden boxes, and will be located at the saw-mill of the Angola Lumber Co. at Hilton. The capacity of the plant when in operation will be 50,000 feet of lumber daily. The boxes will be manufactured for the New York trade, and especially for two large concerns.

Among the shipments last week from Jacksonville, Fla., were the following: British schooner Effie for Hopetown, British West Indies, with a cargo of 35,000 feet of yellow-pine lumber, 17,000 shingles and miscellaneous freight; schooner General Adelbert Ames for New York with 270,000 feet of yellow pine and 191 piling; Russian bark Austrums for Liverpool, England, with 312,851 feet of lumber, shipped by Weston & Co.

In addition to the new factory now nearly completed by the Keyser Manufacturing Co. of Chattanooga, Tenn., a large three-story warehouse is to be erected. The new building will be of brick, heated by steam, and in connection a 60-foot dry-kiln is to be built. With all its buildings and lumber-yard, the company will occupy an area of nearly six acres. The company is receiving a large supply of poplar and oak thoroughly seasoned.

The Raine-Andrews Lumber Co., with headquarters at Elkins, W. Va., has been incorporated, with a capital stock of \$200,000. The incorporators are T. W. Raine, John Raine and Kate Z. Raine of Empire, Pa., and F. L. Andrews and W. M. Andrews of New Bethlehem, Pa. The company has purchased 10,000 acres of timber land on Gladly fork of the Cheat river, in Randolph county, West Virginia, which it is estimated will cut 200,000,000 feet of lumber. The plant will be ready for operation early this fall.

A meeting of the North Carolina Pine Association was held last week at Old Point, at which the following officers were elected: Capt. John L. Roper, president; Mr. E. C. Fosberg, vice-president; Mr. C. S. Russell, secretary, and Mr. R. S. Cohn, treasurer. During the meeting there were reports from twenty-five of the largest firms of the association, and these stated that everything was in a most favorable condition. The present stock amounts to about 60,000,000 feet, which is considered quite small for this season of the year.

With pulp logs included, the cut in the Maine forests this winter is likely to be the largest in the history of the lumber industry, but there will be fewer saw logs than the average for the last ten years. The Penobscot river will have 164,000,000 feet of new logs and 17,500,000 feet of last year's logs to come down in the same drives. The Kennebec cut is set at 154,000,000 feet, all new logs, and Androscoggin operators say they have nearly or quite 200,000,000 feet, although 53,000,000 feet of this is cut and sawed in New Hampshire, not coming into Maine. On the Aroostook, Machias, Union, Narragaus and St. Croix rivers the cut will aggregate about 109,000,000 feet, so that the total cut for the State of new logs will be 626,500,000 feet. Deducting what goes to New Hampshire mills, there remains 573,500,000 feet for Maine mills, of which, it is estimated, 275,000,000 feet will go into pulp, leaving less than 200,000,000 feet of the new logs for the saw-mills.

## MECHANICAL.

## Pittsburgh Rotating Gage Cock.

The Pittsburgh Gage & Supply Co., Pittsburgh, Pa., manufactures a rotating gage cock that covers the field of the original syphon compression gage cock, and has many features which relieve the engineer of annoyance. It is operated by pulling down the lever, to which a chain is attached of any length required, which enables the cock to be placed at any height or in any position difficult to reach. When the cock is opened, which is done automatically by pulling down the lever, the steam or water passing through the spiral causes the stem to revolve rapidly, cleansing the interior of the cock, preventing the formation of sediment, and when allowed to go back to its valve-seat,



PITTSBURGH ROTATING GAGE COCK.

which is done by releasing the lever, grinds it true and clean. This action is positive, as the steam or water cannot pass through the spiral without causing it to rotate. The spiral, being placed before the valve-seat, is protected from collection of sediment or corrosion, always allowing the stem to rotate freely. Another feature is the claw lever, which holds the valve firmly to its seat without interfering with the opening of the cock or the rotation of the stem when the cock is in use. No regrinding is necessary, and there is no wearing out of the valve-seat, no replacing of discs and no leaking. Over 75,000 of these gage cocks are in use.

This concern also manufactures the Pittsburgh Safety Water Column, which effectually does away with the various dangers surrounding the steam boiler, particularly those of low water. Literature sent on application.

## The "Monitor" Planer with Special Attachments.

The success of its small planer, the "Paragon," led the manufacturer, the De

Loach Mill Manufacturing Co. of Atlanta, Ga., to perfect a machine for heavier work, and the illustration herewith represents the "Monitor." All parts are extra heavy, and the machine throughout is built to stand heavy work. It will be noticed that this machine is made with the patent variable friction feed, the company's important improvement. The "Monitor" will surface twenty inches wide, six and one-half inches thick, and weighs 4020 pounds. Large illustrated

mechanism is enclosed, it greatly simplifies the construction, renders the operation noiseless and protects the mechanism

with air-cushioning device. They are entirely self-contained, requiring no pipe connections. The governor is of the high-speed fly-ball type, and the speed of the engine may be regulated to the fraction of a revolution by means of a counterweight. Governors with compound engines are connected to both high and low pressure cylinders, the low-pressure cylinder having hand adjustment, with which

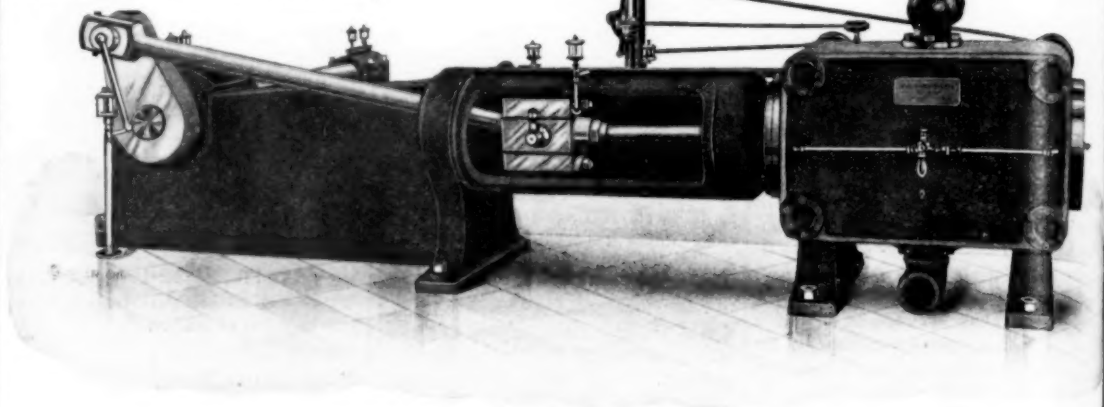


FIG. 1.—THE SOUTHERN CORLISS ENGINE.

catalogue representing the De Loach line of saw-mill machinery, planers, shingle mills, edgers, lath mills, corn and wheat mills, water-wheels, etc., can be had on application to its home office and factory at Atlanta, or to its branch office, 110 Liberty street, New York city.

## The Southern Corliss Engine.

The Southern Corliss engine, shown in Figs. 1 and 2, is an interesting illustration

from falling grit and dust. All moving parts are provided with large bearing surfaces, and are accessible throughout. The pins are extra large, and have phosphor-

the pressure in the low-pressure cylinder may be varied independently of the high-pressure cylinder.

The frame shown is of the girder type, cast in one piece, in this way securing permanent rigidity and alignment and obviating the necessity of bolted joints. The frame is traversed with partitions cast within, and stiffness is further increased by continuous contact with foundation from guides to end of frame. The bearings are extra large, and provided

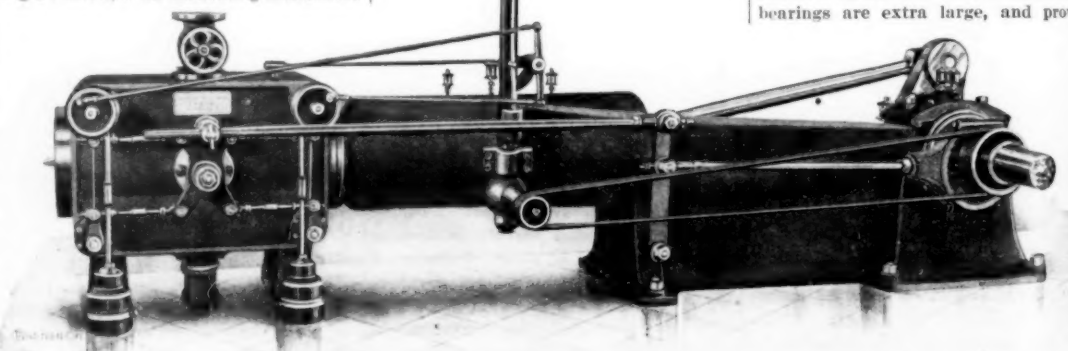


FIG. 2.—THE SOUTHERN CORLISS ENGINE.

of the Corliss type, and possesses several improvements that will be of interest to both engineer and purchaser. The distinguishing feature of the Southern Corliss is the valve gear. As the releasing

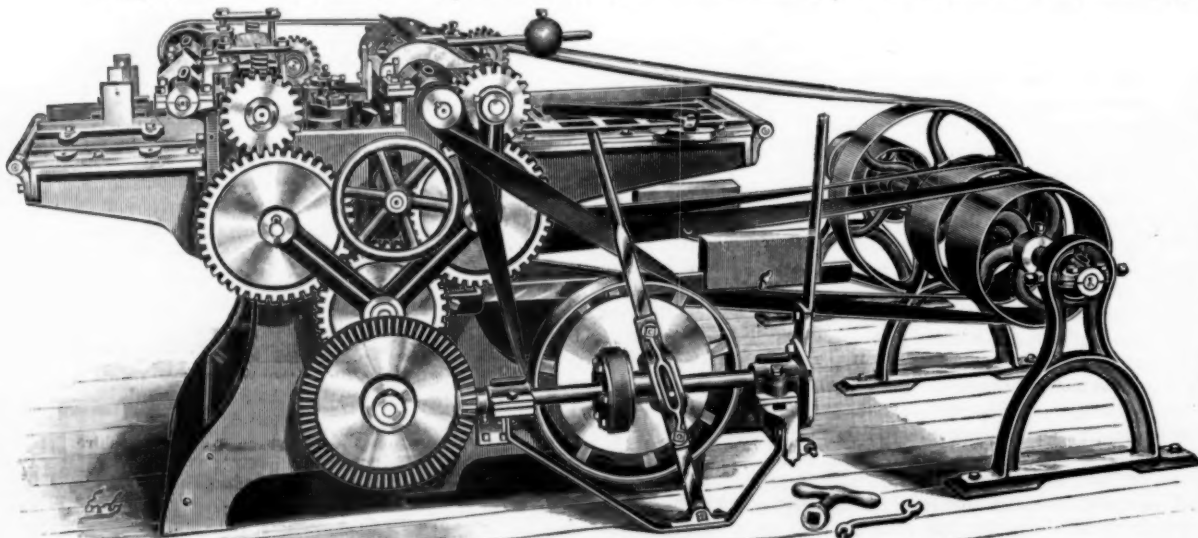
bronze bearings adjustable for wear. Admission valves are double-ported, allowing rapid opening of the ports, with less angular advance.

The dash pots are of the vacuum type,

with quarter boxes lined with genuine babbitt. The crosshead has unusually large wearing surfaces. The shoes have a bearing the full length of crosshead, and are provided with adjusting screws, whereby the most accurate adjustment is obtained. The connecting rod is forged with solid ends, no straps being used. The crank end is fitted with bronze boxes babbitted with genuine babbitt. The crosshead end is fitted with boxes of hard phosphor-bronze. The adjusting wedges are placed one on the inside and one on the outside of the pins, in this way equalizing the wear in the boxes and maintaining a fixed distance between centers of bearings.

The builder has adopted an unique system of duplicating each part. Every piece entering into the construction of the engines is carefully made, conforming to standard gauges and templates. In this way each part is made interchangeable with all others of the same class and size. This system, with classified drawings and records, enables it to make repairs at once. A full line of duplicate parts are carried in stock.

For further details address the builder



THE "MONITOR" PLANER, MATCHER AND MOULDER.



Southern Engine and Boiler Works, Jackson, Tenn.

### An Improved Hoisting Engine.

Much interest has been aroused by steam users in an engine constructed by

The engines are very extensively used in the mining districts of the Southwest and the West, and are giving excellent satisfaction wherever placed. Every engine is thoroughly tested before leaving the builder's shops.

head rods. Since the company first introduced this type of split switches to the attention of the railroads in this country it has devised a number of different designs, and claims that this pattern, design No. 58, is the best.

of these switches is made at the switch lugs; the latter are drilled with one-and-one-quarter-inch centers, and the switch rods are drilled with one-and-one-eighth-inch centers, and, owing to the difference in drilling, an adjustment of one-eighth inch is obtained at each movement of the switch rod. When adjustment is necessary, the bolts are withdrawn, the rods are moved as occasion requires, lengthening or shortening, thus providing for any change of gauge or wear of parts. This form of adjustment is easy and rapid. Either switch rail may be adjusted independent of the other, or both may be adjusted at the same time.

Midway between the heel of the switch and where the heads of the rails diverge a stop lug is bolted to the switch rail; this keeps the switch rail in perfect line when thrown against the stock or rail. The Weir Frog Co. also makes this design with one adjustable rod. Further details may be obtained by addressing the company at Cincinnati, Ohio.

### Westinghouse O. D. Transformers.

The Manhattan Elevated Railroad Co. has recently ordered a large number of Westinghouse O. D. transformers, which are to be used for lighting the elevated railway passenger stations throughout the city of New York. These transformers are to be of 3.2 kilowatt and 6.4 kilowatt size.

The design and method of construction of the Westinghouse O. D. transformer are based on fifteen years of experiment and experience in the manufacture of transformers. The coils are wound to exact dimensions, and all insulating mate-

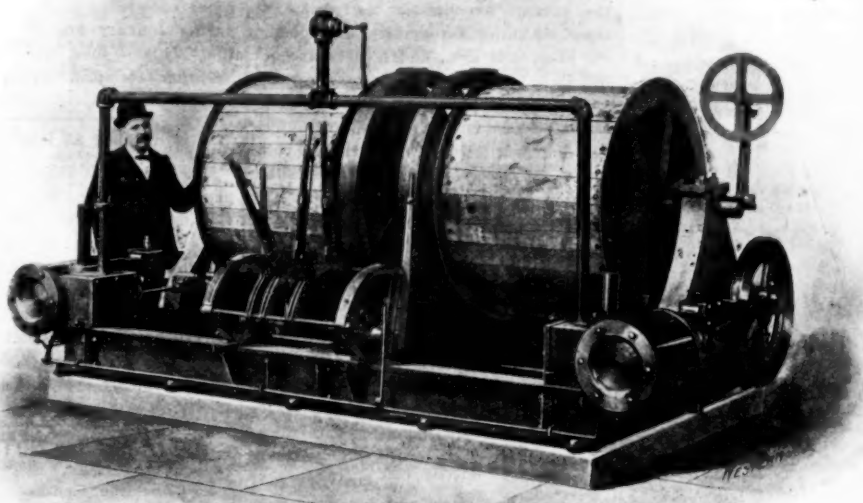


FIG. 1—AN IMPROVED HOISTING ENGINE.

the South St. Louis Foundry, 7516-7518 South Broadway, St. Louis, Mo. It is especially recommended for use in connection with the tail-rope system, double-track inclines or double-compartment shafts. Both drums are loose on the drum shafts, and are entirely independent of each other in operation. They may be thrown in and out of gear with the engines in motion, either separately or together, or one drum may be lowering while the other is hoisting, or both drums may be thrown into gear and the engine used as a regular reversible engine, one load being hoisted while the empty cage is being lowered.

This is unquestionably a most economical style of engine for general mining work, as no steam whatever is used for lowering, while for hoisting the links may be hooked up, cutting off the steam in the early part of the stroke and using it expansively, as in a marine engine. The brakes are especially powerful, being of the differential self-acting type, and will hold securely any load the engine can hoist.

The South St. Louis Foundry builds

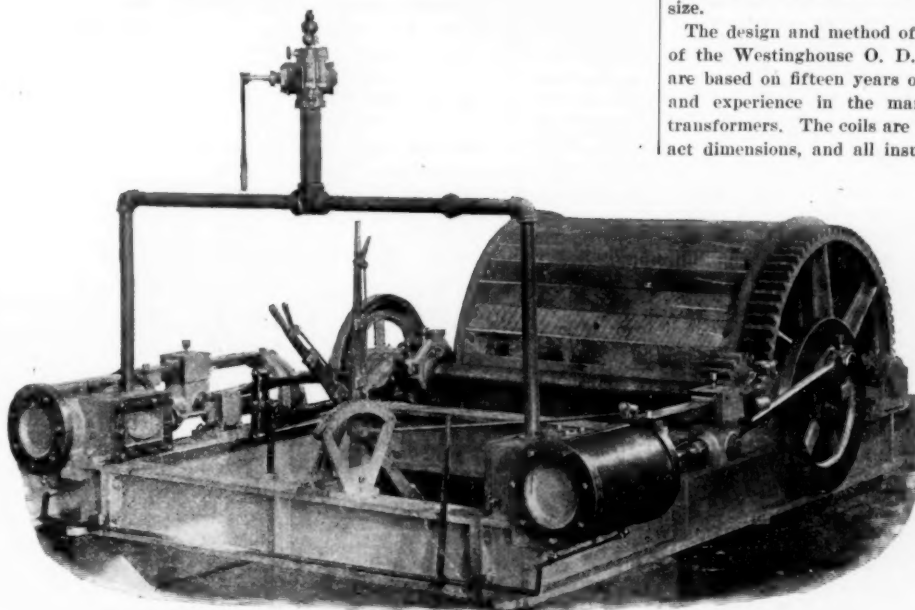
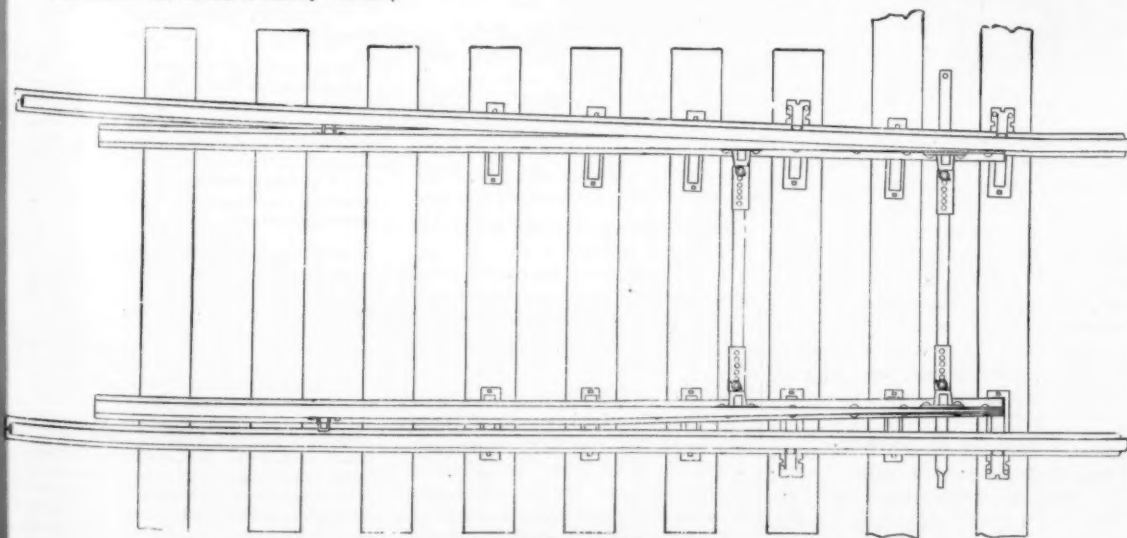


FIG. 2—AN IMPROVED HOISTING ENGINE.



AN IMPROVED SWITCH.

### An Improved Switch.

The accompanying cut illustrates the Weir Frog Co.'s latest design of reinforced split switches, with adjustable

The switch rails are reinforced on both sides, so that if the switch rail should break the reinforcing will hold the parts together with safety to operation until a new rail can be put in. The adjustment

rial is cut accurately to gauge, so that the similar parts of different transformers of the same size are identical mechanically and electrically.

Although the O. D. transformers are of relatively new design, they partake of all the distinctive characteristics which have marked the Westinghouse transformers for many years. In this respect, as in others, the Westinghouse designs have necessitated extremely little modification from year to year, the earlier designs having embodied the essential features of an efficient type of apparatus. In the new transformers, however, are incorporated a number of new and valuable details.

In working out the design of the Westinghouse transformers the attempt has successfully been made to obtain a general excellence without placing undue weight upon any feature of the design. Efficiency at various loads, regulation in all classes of service, insulation and mechanical simplicity and strength have all been made prominent elements in the design. A feature of the transformers is the use of a surrounding body of oil, enclosed in a metal outer case. This oil is valuable both as a cooling medium and because it

these engines any size, and makes any changes desired, and will quote prices on any size or style of hoisting engine on application. The regulation sizes are 8½x10, 8½x12, 10x14 and 10x16.

increases both the life of the insulation and the lightning-resisting power of the transformer.

The coils are individually insulated, and are spread apart at the ends in such a way as to secure the greatest possible heat radiating surface without in any way lowering the efficiency of the apparatus.

The O. D. transformer has been given a considerable range of E. M. F. by winding it for two primary and three secondary

form thickness and width throughout, having no nicks or cuts to cause weak places, with broad hooks for bearing on walls and ample seat for joist. Each of the various sizes of these hangers is made to have more supporting strength than would be given by an oak joist of the size for which the hanger is intended—and that without any useless surplus of metal.

Parties interested should address the W. J. Clark Co., Salem, Ohio, whose ad-



THE LANE HANGER.

voltages. Individual sections of the windings are supplied with terminal contacts which by a simple change of connections give a range of voltage covering all practical requirements.

The secondary coils for all transformers are wound with copper of square cross-section, which gives about 30 per cent. more available cross-section than similar coils wound with round copper, thus reducing the loss due to the resistance of the windings.

Before the O. D. transformer was placed upon the market it was subjected to a series of the most thorough tests in order to remedy any possible defects in design or construction. The complete line of transformers were operated for nearly a year at twice their normal E. M. F. The insulation was subjected to tests in which the E. M. F. was raised to eight times the normal figure, and careful measurements were made of the iron losses, which showed that throughout this long period of experimental overloading the iron had undergone no deterioration, the Westinghouse method of treating the iron being thus proven to be entirely satisfactory.

Every individual transformer before leaving the factory is run at overload with the normal potential, at three times the normal voltage without load, and insulation tests are made at voltages ranging from 4000 to 8000. Subsequently the coils are immersed in oil, which greatly increases their insulation resistance. These transformers may be wound for any E. M. F. up to 6000; they may be arranged for the Scott system of three-phase two-phase transmission, and may be adapted to almost any special class of work. For capacities greater than fifty kilowatts the Westinghouse Company manufactures a line of transformers known as the oil-insulated self-cooling type. These self-cooling transformers are now being made in sizes up to 500 kilowatts. The oil-insulated, water-cooled transformers are being made in sizes up to 2250 kilowatts, and the air-blast transformers in sizes up to 2750 kilowatts.

#### A Necessity in Building.

The use of stirrups (or hangers, as they are now called) for supporting joists and timbers has come to be regarded as indispensable in the construction of buildings of substantial character for any purpose. The Lane hanger, herewith illustrated, has the approval of many prominent builders and architects. It is made of a solid bar or plate of the toughest steel of uni-

vertisement appears elsewhere in this issue.

#### A Necessity for the Housekeeper.

An essential part of good housekeeping is the quality of the kitchen goods. One article which is put on the market in many forms is the coffee mill, and housekeepers know that many of the mills are anything but satisfactory. The "Jewel," made by the Arcade Manufacturing Co. of Freeport, Ill., however, seems to fill every requisite. It is substantially constructed, yet is so handsomely finished as



THE "JEWEL" COFFEE MILL.

really to be ornamental in appearance. It is provided with grinding apparatus which will retain its edge and is of the best metal, consequently the particles of coffee after passing through the mill are even in size, and the quantity required can be regulated by a glance at the mill reservoir, which is of glass. There is no danger of grinding too much or too little for the morning meal. The Arcade Company would be pleased to correspond with the trade relative to it.

#### A Thriving Community.

The business men of Ashland, Ky., have reorganized the Board of Trade, with Hon. S. S. Savage, president, and A. C. Campbell, secretary. The organization proposes to call attention to the special facilities for manufacturing in the vicinity of Ashland, and its inducements in the way of low freight rates and other features. Ashland is one of the most prosperous communities of Kentucky.

## PHOSPHATES.

### Phosphate Markets.

Office Manufacturers' Record,  
Baltimore, Md., March 20.

A moderate business in a local way has been developed during the past week in the various avenues of the phosphate trade. As in other fertilizer ingredients, the market is firm, and holders are not disposed to sell at concessions. From points of production in the Southern phosphate belt the conditions are not materially changed, and mining by various companies is proceeding with considerable vigor in Tennessee and Florida. The market for South Carolina rock is about steady, with shipments light, both at home and foreign points. Florida rock is moving with more freedom, especially from ports out of the State. The market for land rock is active and firm, with considerable moving from Punta Gorda and Port Tampa. Values have undergone no change during the week. In Tennessee the market is reported strong, with stocks of phosphate rock in the Mt. Pleasant section light. At the close on Wednesday the tone was firm, and inquiries from buyers materially increasing. The only charter reported for the week was the British steamer Glenfield, 1385 tons, Ferdinandina to Ghent with phosphate rock at 16 $\frac{1}{2}$ ¢, March.

### Fertilizer Ingredients.

The market for most descriptions of ammoniates has ruled strong during the week, with a fairly active demand from the usual sources. In the West stocks are reported very light, and held at outside figures.

The following table represents the prices current at this date:

Sulphate of ammonia (gas).....	\$2 75 @ 2 80
Nitrate of soda, spot Balto.....	2 00 @ 2 10
N. York.....	1 85 @ —
Blood.....	2 45 @ 2 50
Azotine (beef).....	2 47 $\frac{1}{2}$ @ 2 50
Azotine (pork).....	2 47 $\frac{1}{2}$ @ 2 50
Tankage (concentrated).....	2 40 @ 2 42 $\frac{1}{2}$
Tankage (9 and 30).....	2 37 $\frac{1}{2}$ @ 10 $\frac{1}{2}$ 2 40 & 10
Tankage (7 and 30).....	20 50 @ 21 00
Fish (dry).....	27 50 @ 30 00

### Phosphate and Fertilizer Notes.

The foreign shipments of Tennessee phosphate rock from Pensacola for the week ending the 12th inst. amounted to 6009 tons.

The Centerville Phosphate Co. in Hickman county, Tennessee, is said to be making daily shipments of phosphate rock amounting to from forty to seventy tons.

The Spanish steamship Gracia cleared from Savannah, Ga., last week for Bremen and Hamburg with 1420 tons of high-grade Florida phosphate rock among her cargo for the latter port.

The schooner Mary Lee Patton cleared last week from Charleston, S. C., with 800 tons of phosphate rock for Norfolk, Va., and the schooner Anna L. Mulford for Elizabethport, N. J., with 850 tons.

The biennial report of the Florida commissioner of agriculture gives the value of foreign exports of high-grade Florida phosphate rock from ports beyond the State as follows: For eleven months ending November 30, 1900, Savannah \$1,252,190, Brunswick \$42,250, and by rail \$550,000.

The fertilizer business out of Charleston, S. C., for the eight weeks ending March 12 was the largest ever recorded in a similar period. During the month of February the shipments from Charleston to points in South Carolina, North Carolina, Georgia and Alabama aggregated 200,000 tons.

Mr. E. L. Gregory of Mt. Pleasant, Tenn., in the Mt. Pleasant Chronicle gives the following as the tone of the market in phosphate rock for the week ending

March 13: "Market strong. Several good sales made during the last week at above quotations. The lot of 75-53 spoken of last week as being optioned at \$2.75 has been taken up. Inquiries from buyers are materially increasing. The sales so far this spring have been above the average in quantities. Of my personal knowledge there were sales made during January and February aggregating 71,900 tons for 1901 delivery. Weather for past week good; mining rather active."

### Copper at Ducktown.

Mr. Horace M. Ellington writes in his paper, the Southern World, of Blue Ridge, Ga., describing the export mining operations at Ducktown, Tenn., that the Tennessee Copper Co. is erecting furnaces for smelting and refining, power-houses, pumping stations and tanks, roast sheds, ore crushers, railroads and office buildings and opening new mines. Its machinery will be run by compressed air and electricity.

### TRADE NOTES.

An Order from Kansas.—D. B. Bennett of Ottawa, Kans., has recently ordered a 10-ton ice plant from the York Manufacturing Co. of York, Pa.

A Steady Customer.—The International Paper Co. is one of the many steady customers of the Burt Manufacturing Co. of Akron, Ohio. The latter has recently filled its twelfth order for Cross oil filters for the International Company.

Compresses for Sale.—Elsewhere will be found a reference to the sale of two cotton compresses, the property of the Consolidated Compress Co. of Norfolk, Va. They are of 2000 and 1500 tons capacity, and in good condition. Richard A. Dobie at Norfolk may be addressed.

Rushed With Orders.—Customers of Messrs. J. C. Steele & Sons of Statesville, N. C., are located throughout the South, judging by recent orders which this firm has secured for its "New South" brick-making machinery. Messrs. Steele & Sons have recently perfected a new machine, which is one of the best on the market.

Do Quick Work.—The hose coupler manufactured by the W. J. Clarke Co. of Salem, Ohio, is known as "Quick-as-a-Wink" because it can be attached so easily and readily. The Frick & Lindsay Co. of Pittsburgh, which has an extensive sale of air hose for tools, has decided to use this coupling in place of the ordinary attachment.

A Wide Territory.—The American Electric Fuse Co. is receiving orders for its specialties from such a wide area that it has been obliged to double the capacity of its plant. It has located its Eastern office at No. 116 Nassau street, New York, in charge of Mr. W. B. McCurdy, where a line of fuses, wire, lightning arresters, etc., may be seen.

Texas Lands.—In another column will be found reference to valuable property in Texas. It includes 6500 acres in Liberty county, of which 1800 acres are in pine and hardwood. The property is located in what is known as the "oil country," and is offered at a remarkably low price. S. W. Bogy at Corsicana will be pleased to correspond with parties interested.

Cement and Lime Works.—Attention is called to the sale of the Blue Ridge Cement and Lime Works located near Blue Ridge Springs, Va. This plant will be sold on April 17 by order of the court. It has complete equipment for manufacturing the products mentioned. Messrs. C. P. Moomaw and J. D. Johnson, commissioners of sale, may be addressed at Roanoke, Va.

Spring Thoughts.—Some of them are naturally relative to the painting and whitewashing which are required with the season. A machine which will apply the compounds mechanically and distribute them evenly over a surface is a great labor-saver. This is what is claimed for the Star whitewash and cold-water paint spray machines. The Star Brass Works, 67 to 69 South Canal street, Chicago, has secured a wide market for this apparatus. It also makes a specialty of cold-water fireproof paint suitable for interiors of factories, and, in fact, all kinds of buildings.



# CONSTRUCTION DEPARTMENT.

**THE MANUFACTURERS' RECORD** seeks to verify every item reported in its Construction Department by a full investigation and complete correspondence with every one interested. But it is often impossible to do this before the item must be printed, or else lose its value as news. In such cases the statements are always made as "rumored" or "reported," and not as positive items of news. If our readers will note these points they will see the necessity of the discrimination, and they will avoid accepting as a certainty matters that we explicitly state are "reports" or "rumors" only. We are always glad to have our attention called to any errors that may occur.

\*Means machinery, proposals or supplies are wanted, particulars of which will be found under head of "Machinery Wanted."

In correspondence relating to matters reported in this paper, it will be of advantage to all concerned if it is stated that the information was gained from the Manufacturers' Record.

It often occurs that the organization of a new company in a town is not known by the postmaster, and hence letters addressed to the company are returned marked "not known." The Manufacturers' Record reports the first organization of all companies, and our readers, in seeking to get into communication with them, should be very careful in deciding how to address them, and it is often advisable to add the names of one or more incorporators as an aid to the postmaster in delivering mail.

## ALABAMA.

Altouna—Coal Mines.—J. M. Elliott, Gadsden, Ala., and others have purchased 4000 acres of coal lands, which, it is stated, will be developed.

Birmingham—Improvement Company.—The Princeton Land Co. has been incorporated by B. F. Johnson and others, with capital stock of \$10,000.

Birmingham—Real Estate.—The Ensley Realty Co. has been incorporated by Eugene F. Ensley and H. M. Harton; capital stock \$10,000.

Birmingham—Land Company.—J. C. Patterson and Robert Neill have incorporated the Steel City Land Co. of Ensley, with capital stock of \$18,000, to conduct general land business.

Birmingham—Water-works.—The Irondale Water, Light & Power Co., previously reported as building water-works for several suburban towns, has asked for authority to lay water mains in Birmingham, and states that it will commence work as soon as privilege is granted. Company has completed a 10-inch artesian well, and will bore four more wells. Contract for pipe has been closed.

Gaylesville—Cotton Mill.—It is reported that a new cotton mill will be erected in which D. A. Hudson is interested.

Montgomery—Veneering and Excelsior Factory.—W. B. Burton is erecting a veneer and excelsior factory, as reported recently; capacity will be 500 baskets and ten tons of excelsior per day.\*

New Decatur—Brick Works, etc.—The Nashville (Tenn.) parties who recently purchased the Ivens Machine Works at New Decatur and were reported to enlarge and operate same, will also establish a plant for the manufacture of brick with daily capacity of 30,000 bricks. The plants will be operated under the name of the North Alabama Engineering Co.

Ozark—Electric-light Plant.—J. E. Acker, mayor, states that there is no effort being made at present to establish an electric-light plant, as reported recently.

Phenix City—Water-works.—The city has been authorized by the legislature to sell \$25,000 of bonds for construction of a water-works system. Alber & Byrne, consulting

engineers, of Birmingham, Ala., have been engaged to prepare the plans and specifications and superintend construction of same; W. D. Wilkins, mayor.

Sheffield—Steel-hoop and Cotton-tie Plant. It is reported that the Sheffield Rolling Mill Co., T. L. Johnson, secretary and treasurer, is making arrangements for the establishment of a steel-hoop and cotton-tie plant with capacity of 100 tons per day in connection with its mills at Sheffield.

Sheffield—Electric-light Plant and Water-works.—H. Habler has applied for franchise for construction of a \$75,000 electric-light plant and water-works.

## ARKANSAS.

Batesville—Button Factory.—P. T. Tilbe contemplates the establishment of a button factory.

Batesville—Heading Factory.—A heading factory to cost \$40,000 will be established. Address G. R. Parsons, manager.

Belrue—Timber Lands and Saw-mill.—A. L. Hartley of Fulton, Ohio, will develop timber lands, operate saw-mill and furniture factory at Belrue, Ark.

Camden—Cottonseed-oil Company.—The Camden Cottonseed Oil Mill Co. has been organized, with capital stock of \$50,000; W. W. Brown, president; S. B. Proctor, vice-president; A. L. Morgan, secretary; W. K. Ramsey, treasurer.

Hot Springs—Paint Factory.—William D. Ham is organizing a stock company for the manufacture of paint from iron pyrites.\*

Little Rock—Mining.—The New Century Mining Co. has been incorporated, with capital stock of \$500,000, by H. W. Guertzmacker, president; J. L. Horr, vice-president, and L. H. Kaiser, secretary and treasurer.

Pine Bluff—Foundry.—Fleet Jones has contract for building an addition to the Dilley Foundry. When this enlargement is completed the output of castings will be from 250,000 to 400,000 tons per month.

Pine Bluff—Lumber Mill.—D. C. Cole & Co. of Kennett, Mo., are reported as intending to locate a lumber and general woodworking factory at Pine Bluff.

## FLORIDA.

Apalachicola—Saw-mill, etc.—The Louisell-Lexley Lumber Co., reported recently as incorporated under Mobile, Ala., will conduct general logging and saw-mill business at Apalachicola, Fla. Company owns large tract of pine lands in Liberty county. Address Wm. H. Louisell at Mobile.

Delta.—Chartered: The Delta Pythian Building Association, with capital of \$1200, by P. W. McLean, E. H. Robinson and Y. W. C. Yarbrough.

Fernandina—Canning Factory.—S. S. Goffin, Nassauville, Fla., will probably establish canning factory at Fernandina.

Fort Myers—Water-works.—The question of issuing \$20,000 of bonds for the construction of water-works will soon be voted upon. Address "The Mayor."

Jacksonville—Baking-powder Company.—The Hygienic Baking Powder Co. has been incorporated, with capital stock of \$25,000, to manufacture baking powder, etc. Arthur F. Perry, H. H. Richardson and A. S. Hubbard are among the incorporators.

St. Petersburg—Real Estate, etc.—Chartered: St. Petersburg Midwinter Fair Association, for the purpose of dealing in real estate, etc.; capital stock \$10,000; incorporators, Hugh McQuiston, W. L. Ainslie, W. W. Hunt and others.

Tampa—Plumbing and Hardware Company.—Chartered: The Foley Plumbing & Hardware Co., with capital stock of \$10,000, by John Foley, J. A. Rankin and E. R. Prince.

## GEORGIA.

Atlanta—Paper Company.—The Wellhouse Paper Co., which has been in the hands of receiver, will be reorganized by Albert Steiner and others and a company incorporated, probably to be known as the American Paper Co., for the purpose of operating same. Jos. A. McCord is also interested in the reorganization.

Augusta—Ice Factory.—W. F. Alexander, secretary of Board of Trade, reports that efforts are being made for the establishment of an ice factory.

Cartersville—Cotton Mill.—The company previously reported as being organized to build a cotton mill has been chartered as the

Cartersville Cotton Mills, with a capital stock of \$50,000, privilege of increasing to any amount not exceeding \$1,000,000. The incorporators are J. A. Stover, H. E. Cary, Rev. Sam P. Jones and others. For definite information in regard to character of mill, etc., address Judge Jno. W. Akin.

Cedartown—Cotton Mill.—The Standard Cotton Mills will increase to 12,500 spindles, commencing improvements about latter part of April; A. W. Birkbeck, secretary.

Colquitt—Timber Land.—It is reported that J. P. Williams of Savannah and J. R. Sharpe of Bainbridge have sold, through C. C. Bush of Colquitt, 19,000 acres of timber land to E. V. Babcock of Pittsburg.

Columbus—Fertilizer Factory.—The Home Mixture Guano Co. is increasing the capacity of its works.

Columbus—Planing Mill.—W. T. Harvey & Co. will erect additional building and install new machinery for increasing capacity of and enlarging their planing mill.

Columbus—Foundry and Machine Works.—The Columbus Iron Works Co. will erect additional foundry and increase capacity of its plant, and is also erecting a three-story building to be used as storehouse.

Cornelia—Tannery.—The J. C. McConnell Leather Co., reported recently to enlarge its tannery for making lace leather, states that it will either enlarge its present plant or establish plants at other places before a great while.

Dahlonega—Gold Mine.—Henry V. Maxwell, M. E., of Knoxville, Tenn., previously reported as to open gold mine at Dahlonega, advises that a company will be organized to operate gold mine, build a mill of not less than fifty stamps, together with electrical-transmission plant of sufficient capacity to place 800 inches of water on the property for sluicing the ores.

Dublin—Water-works, Electric Lights, etc. It has been decided by popular vote to issue \$25,000 of bonds for schoolhouse and for improvements to the water-works and light plants, lately reported. Address "The Mayor."

Hapeville—Cooperage, etc.—H. B. Downing, J. R. Polak and C. Downing have incorporated the Georgia Cooperage Co., with capital stock of \$25,000, and privilege of increasing to \$100,000, to manufacture staves, barrels, cottonseed oil, etc. Company may need machinery later on, but not at present. Address H. B. Downing.

Harmony Grove—Flour Mill.—The Hardman Oil Mill and the Farmers' Gin & Milling Co. have consolidated, and will operate as the Hardman Milling Co. a flour mill of seventy-five barrels daily capacity.

Jackson—Electric-light Plant.—The Pepperton Cotton Mills is installing an electric-light plant.

Rossville—Machinery Plant.—Lane Lyle of Chattanooga, Tenn., will establish machinery plant and employ from twenty-five to thirty men.

Savannah—Extract Company.—James H. Furber, A. S. Rosenfield and U. H. McLaws have incorporated the Kocola Company, with capital stock of \$3000, with privilege of increasing, for the manufacture of extracts, etc.

Sparks—Ginney, etc.—The Sparks Improvement Co., reported recently as organized for the manufacture of brick and to erect a block of nine stores, also contemplates erecting and equipping a cotton ginney latter part of the summer.\*

Winder—Telephone System.—The North Georgia Telephone & Telegraph Co. has been organized (as previously reported) for construction of a system from Winder to Athens and from Winder to Augusta; R. B. Russell, president.\*

## KENTUCKY.

Bar—Flour Mill.—Sam B. Haslett will remodel his corn and feed mill and install a small flour-mill plant; correspondence desired.

Bayou—Flour Mill.—J. R. Hawkins, Jr., will remove his flour mill from Shelberville, Ill., to Bayou, and may install some additional machinery.

Burnside—Electric-light Plant.—The Burnside Electric Light & Power Co. has been chartered, with capital stock of \$4500, for erection of the electric-light plant recently reported.

Covington—Improvement Company.—The Kentucky Improvement Co. has been incorporated, with capital stock of \$15,000.

Eve—Flour Mill.—Sam V. Vance is reported to erect a new roller flour mill. Contract for machinery has not been awarded.

London—Telephone System.—A. W. Hugins will construct telephone system from London to Manchester, as reported lately, a distance of twenty-five miles. When this is completed the line will be extended to Hazard, making a complete system of about seventy-five miles.\*

Louisville—Coal Elevator.—D. X. Murphy & Bro. have made plans for 35,000-ton coal elevator for the Monongahela Consolidated Coal & Coke Co.

Louisville—Vinegar Factory.—Jones Bros. & Co., capital stock \$75,000, has been incorporated for the purpose of manufacturing vinegar, cider, etc., by W. E. Kremer, E. J. Kelly, B. F. Board, all of Charleston, W. Va., and others.

Middlesboro—Coal Mines.—George Gerrish of Boston, Mass., has purchased coal land near Middlesboro, and will probably develop.

Munfordville—Flour Mill.—It is reported that Benjamin Sims of Cave City, Ky., will erect a roller flour mill at Munfordville, and has not awarded contracts for machinery.

Mt. Olivet—Telephone System.—A five-mile telephone line is to be established from Mt. Olivet to Piqua. Names of interested parties will be announced later.

Paducah—Churn Factory.—The Newman Decker Churn Co., reported lately as incorporated, will erect a factory for the manufacture of a patent churn with daily capacity of 200. Address Fay Bridges, Box 456.\*

Williamsburg—Flour Mill.—The Williamsburg Milling Co., reported previously as organized, will establish mill of seventy-five barrels of flour and seventy-five barrels of meal per day.\*

## LOUISIANA.

Crowley—Rice Mill.—W. W. Duson, Peter F. Door and Dr. J. F. Naffter, all of Crowley, and others have purchased the Marks rice mill and will, it is said, organize a stock company for operating it.

Lake Charles—Carriage and Implement Company.—The Welsh Carriage & Implement Co., with capital stock of \$10,000, has been organized, with H. W. Lanz as president.

New Orleans—Jail.—An ordinance has been introduced in the city council for the erection of a jail and workhouse to cost about \$100,000. The mayor can give information.

New Orleans—Elevator.—Plans and specifications have been prepared for the new grain elevator to be built by the Illinois Central Railroad, which will have capacity of 1,500,000 bushels. J. T. Harahan is vice-president and general manager, Chicago.

New Orleans—Mercantile.—S. J. Shwartz, Marks Isaacs, J. K. Newman, R. H. Mack and others have incorporated the Shwartz & Isaacs Co., Limited, with capital stock of \$200,000.

New Orleans—Trunk Factory.—The Crescent Trunk Co. is remodeling building, and will install machinery for the manufacture of trunks, bags, etc.

New Orleans—Mercantile.—Nick Muller, G. W. Hall, Isaac A. Broussard and others have incorporated the Weeks Island & Gulf Fish Co., with capital stock of \$50,000.

New Orleans—Iron and Brass Foundries, Machine Shops, etc.—The G. D. Von Phul Co., Limited, has been incorporated, with capital stock of \$15,000, for the establishment and operation of brass and iron foundries and machine shops, and for the manufacture and repair of agricultural implements, machinery, etc. G. D. Von Phul is president; Henry L. Fuqua, vice-president, and Randolph Matta, secretary.

Shreveport—Improvements.—It has been decided by popular vote to issue the \$100,000 of public improvement bonds, previously reported. Address "The Mayor."

St. Martinsville—Saw and Shingle Mill.—Kelso & Shelburne will erect saw-mill, as lately reported, with daily capacity of 20,000 feet, and a small shingle mill.

## MARYLAND.

Baltimore—Real Estate.—The Home Investment Co. has been incorporated by William Winchester, William F. Lucas, Thomas A. Whelan and others, for the purpose of dealing in real estate.

Baltimore—Packet Company.—Walter O. Snyder, Thomas E. Lambert, W. Theodore



Revell and others have incorporated the Anne Arundel Packet Co., with capital stock of \$25,000.

Baltimore—Shipsmithing and Manufacturing.—The Maryland Shipsmithing and Dredge Works has been organized by James Walker, John Russell Kelso, Charles Henry Merryman and others, capital stock \$10,000, for conducting a general shipsmithing and manufacturing business.

Baltimore—Ship-yard.—The Columbian Iron Works, operating ship-yard and dry-dock, now in the hands of receiver, may possibly be reorganized with larger capital for the purpose of putting in improved machinery. An effort to raise the capital is now being made.

Baltimore—Foundry, Machine and Elevator Plant.—The Maryland Foundry & Machine Co., reported lately incorporated, has purchased the foundry, machine and elevator plant of the Snowden & Cowman Manufacturing Co., and will operate same; Thomas P. Stran, Jr., president.

Baltimore—Sewer.—The municipal board of public improvements has approved the ordinance authorizing the extension of Jenkins' run sewer at a cost of \$20,000.

Baltimore—Land Company.—The Bellevue Club of Baltimore City has been incorporated by W. J. Cunningham, Lewis H. Uhrig, William M. Byrne and others for the purpose of dealing in land, etc.; capital stock \$1200.

Baltimore—Mining Company.—The Columbian United States Mining Co. has been incorporated under Delaware laws, with capital stock of \$1,000,000, by Frederick W. Feldner, Oliver Hoblitzell, Edwin Warfield and others for the development of gold mines, railroad construction and river transportation in North, South and Central America.

Baltimore—Picture-frame and Furniture Factory.—George Esselman, Nathan H. Hirschberg, Lewis M. Elbersson and others have incorporated the George Esselman Company, with capital stock of \$20,000, for the manufacture of picture frames, mirror and room moldings, furniture, etc.

Barton—Mining.—John Coyne of Baltimore, representing Philadelphia (Pa.) parties, has purchased and will develop the mining properties of the Sinclair Mining Co. at Barton, which has been idle for some months.

Belair—Slate Quarries.—The Cardiff & Peach Bottom Slate Co. has been organized by Nelson A. Heaps, Thomas J. Williams, William W. Roberts and others, with capital stock of \$25,000, for the operation of the Hickory Hill quarry.

College Park—Telephone System.—The Chesapeake & Potomac Telephone Co. of Baltimore contemplates the establishment of a telephone system at College Park.

Cumberland—Telephone System.—The Woodford Telephone Co. of Elkins, W. Va., has applied for franchise to construct a system at Cumberland, Md.

Cumberland—Rolling Mill.—Edward H. Welsh, receiver for the Potomac Steel Co., has arranged for the running of the mill under the receivership. The mill will resume April 1 with 150 men employed, and as rapidly as possible the entire plant will be put in operation, employing about 500 men.

Great Falls—Electric-power Plant.—The Great Falls Power Co., which controls the rights and property at Great Falls, Md., will, it is reported, proceed with the work of establishing a system for utilizing the power of the Potomac river at Great Falls for the production of electricity. It is understood that this work will require an expenditure of \$2,000,000. Address the company at Washington, D. C.

Hagerstown—Carriage Factory.—Chartered: The Hess Carriage Co., with capital stock of \$20,000, by John G. Hess, president; V. M. Hess, vice-president, and M. E. Hess, secretary and treasurer, to succeed the Hess Manufacturing Co. in the manufacture of carriages, buggies, etc.

Laurel—Water-works and Electric-light Plant.—The building of water-works and electric-light plant, previously reported, but which has been delayed by litigation, will probably now be carried out. The mayor can give information.

Luke—Automobile Company.—The Maryland Automobile Manufacturing Co. will increase its capital stock, \$25,000, to \$50,000, but does not intend making any improvements.

Oakland—Furniture Factory.—A company will be organized, with capital stock of \$15,000, for the establishment of a furniture factory. Names of interested parties will be announced later.

Ocean City—Water-works and Sewerage System.—The plans of Engineer Arthur V. Brown for the construction of the water-works and sewerage system (previously re-

ported) have been adopted, and bids will be asked. Address "The Mayor."

Pearre—Coal Mine.—Louis Mizelle is opening an abandoned coal mine and starting coke ovens.

Washington, D. C.—Improvement Company.—The Tropical Mexico Planting Association has been incorporated by R. B. Lawrence, George P. Hart, S. F. Laurence, Geo. Poe and John Turner, all of Hartford, Conn., capital stock \$25,000, for the cultivation of lands.

#### MISSISSIPPI.

Columbus—Knitting Mill.—A company is being formed by V. D. Molloy, John D. Askew, Joseph Bell and others for the establishment of a \$30,000 knitting mill.

Crystal Springs—Cottonseed-oil Mill and Fertilizer Factory.—The Mississippi Manufacturing Co. will probably establish cottonseed-oil mill and fertilizer factory, and wants information regarding the necessary machinery.\*

Jackson—Trading Company.—The Denson Trading Co. has been chartered, with capital stock of \$150,000.

Jackson—Fertilizer Factory.—The Jackson Fertilizer Co., previously mentioned, will erect an entirely new sulphuric-acid plant and fertilizer factory.

Jackson—Lumber Company.—Chartered: The F. A. Favre Lumber Co., with capital stock of \$100,000.

Jackson—Milling.—Chartered: The Leekee Milling Co., with capital stock of \$10,000.

Laurel—Brick and Tile Works.—The Laurel Brick & Tile Co. has been incorporated, with capital stock of \$25,000.

Lumberton—Ice Plant.—The Hattiesburg Ice Co. of Hattiesburg, Miss., has made a proposition for the establishment of an ice plant at Lumberton.

Vicksburg—Bridges, etc.—The commissioners of the Vicksburg National Military Park will invite bids for the grading of the inside park roadway, eight miles in length, and will also invite competitive plans and bids for the construction of four steel bridges, two to be at least 400 feet long and two 75 feet long; Wm. T. Rigby, acting chairman.\*

#### MISSOURI.

Decatur—(not a postoffice)—Flour Mill.—It is said that Albert Hadson of Sycamore, Mo., has purchased the flour mill at Decatur of John Caldwell, and will install new roller machinery, contract for which has not been awarded.

Dresden—Mercantile.—Chartered: The Dresden Mercantile Co., with capital stock of \$4500, by S. L. Adams and others.

Farmington—Lead Mines.—The Anaconda Lead Co., with capital stock of \$1000, has been chartered by G. J. Cole, W. M. Harlan, K. T. Nixon and others.

Higginsville—Manufacturing.—The Fowler-Bogle Manufacturing Co. has been incorporated, with capital stock of \$5000, by T. B. Fowler, M. T. Bogle and M. M. Bogle.

Joplin—Mining.—The Caulkins Mining Co., with capital stock of \$100,000, has been incorporated by W. R. Caulkins, A. L. Caulkins, A. E. Bendelari and others.

Kansas City—Elevator Company.—The Merchants' Elevator Co. has been incorporated, with capital stock of \$10,000, by John S. Smith, Claud D. Williams and others.

Kansas City—Bridge.—The Kansas City Belt Railway Co. will erect steel bridge at McGee street at an estimated cost of \$15,000.

Kansas City—Electric Light and Power.—Hugh C. Ward, Charles E. Farley and Chas. H. Rickert have incorporated the People's Electric Light & Power Co., with capital stock of \$2000.

Kansas City—Oil Company.—W. P. Cunningham, 830 East Eighth street, has organized the Sedalla & California Oil Co., as reported lately, with capital stock of \$250,000, for the purpose of boring oil wells in California.

Senath—Flour Mill.—W. Williamson, West, Tenn., contemplates establishing a roller flour mill at Senath.\*

St. Louis—Investment Company.—Chartered: The Surety, Realty & Investment Co., with capital stock of \$75,000, by Meyer Bauman, Morris Rich and Alvin L. Bauman.

St. Louis—Investment Company.—Chartered: The M. B. O'Reilly Realty & Investment Co., with capital stock of \$100,000, by Gerald B. O'Reilly, M. B. O'Reilly and others.

St. Louis—Drug Company.—Chartered: The Wels-Humrich Company, with capital stock of \$5000, by William B. Humrich and others.

St. Louis—Supply Company.—Chartered: The Acme Supply Co., with capital stock of \$20,000, by Philip S. Kingsland and others.

St. Louis—Water Company.—The Ponce de

Leon Water Co. has been incorporated, with capital stock of \$2500, by William S. Hayner, Jesse W. Page, Henry N. Allen and others.

St. Louis—Importing Company.—Chartered: The Hetzel Importing Co., with capital stock of \$10,000, by Louis V. Hetzel and others.

Webster Groves—Water Supply.—The city will hold an election March 25 to determine whether or not to accept the plans of J. B. Quigley of Sedalia for supplying Webster Groves with water.

#### NORTH CAROLINA.

Belmont—Cotton Mill.—The company reported previously as being organized for the establishment of a 5000-spindle cotton mill has been incorporated as the Chronicle Cotton Mills, with capital stock of \$75,000, and privilege of increasing to \$125,000, by John F. Love and others.

Cedar Valley—Flour Mill.—D. C. Flowers will erect a new flour mill.

Charlotte—Flour Mill.—J. Lee Sloan, Jr., F. J. Knox and H. J. Brown have incorporated the Davidson Milling Co. for the manufacture of flour, cornmeal, cottonseed oil, etc.; capital stock is \$5000, with privilege of increasing to \$25,000.

Charlotte—Cotton Mill.—The company reported previously as being organized by R. M. Miller, Jr., for the establishment of a mill of 5000 spindles and 3000 twistlers and later on adding a mercerizing plant, has incorporated as the Elizabeth Mills, with capital stock of \$100,000, and privilege of increasing to \$250,000. The mill will be erected at Lillerton. Among the incorporators are John W. Miller, Vinton Liddell and R. M. Miller, Jr.

Charlotte—Drug Company.—The Gray-Reese Drug Co. has been organized, with capital stock of \$10,000, and privilege of increasing to \$25,000. R. S. Gray is president.

Charlotte—Telephone Plant.—The plant of the Queen City Telephone Co., which has been in the hands of receiver, has been purchased by James B. Curtis, 71 Wall street, New York city, and it is reported that the system will be improved and operated by a company in which he is interested.

Coleridge—Flour Mill.—It is reported that R. L. Caveness will install roller machinery, and has not let contracts for machinery.

Concord—Mercantile.—Chartered: The W. A. Wilkinson Company, with capital stock of \$6000, by W. A. Wilkinson, R. L. Coble and W. L. Robins.

Dallas—Cotton Mill.—J. D. Moore and J. O. White of Gastonia are interested in the organization of a company for the establishment of a 6000-spindle cotton mill at Dallas.

Durham—Power Plant, Ice Factory, Car Sheds, etc.—At a recent meeting of the Durham Traction Co. plans were submitted for the erection of the company's proposed power-house, ice and cold-storage plant and electric-light plant. Contract for car shed and power plant has been awarded to Christian & Houston.

Fayetteville—Shirt Factory.—James R. Williams, R. W. Bidgood and W. J. McDiamid have incorporated the Cumberland Manufacturing Co. for the manufacture of shirts, trousers and other garments.

Fayetteville—Water-power.—The Cape Fear Electric Power Co., of which W. M. Morgan of Fayetteville is president, reported last year as being organized, is now preparing to have the surveys made with a view to developments of its plant and for the transmission of electricity to adjacent towns.

Harrisburg—Brick Works and Ginnery.—The Harrisburg Improvement Co. has been incorporated, with capital stock of \$25,000, by S. F. Harris, J. F. Alexander and others, and will establish brick-making plant and ginnery. Address S. F. Harris.\*

Henderson—Buggies.—D. G. Cooper, S. S. Parham, R. J. Corbitt and others have chartered the Corbitt Buggy Co., with capital stock of \$20,000.

Kinston—Grist Mill.—The Neuse Milling Co., reported recently as incorporated, will erect grist mill with capacity of 400 bushels per day. Address C. F. Harvey.

Lenoir—Cotton Mill.—It is reported that J. D. Moore of Gastonia is interested in the establishment of a cotton mill at Lenoir.

Lexington—Cotton Mill.—It is reported that another cotton mill to employ 500 operatives will be established at Lexington. Names of interested parties will be announced later.

Pilot Mountain—Tobacco Company.—E. M. and J. C. Dodson, J. W. Rodman, W. L. Culler and others have incorporated the Dodson Bros. Tobacco Co., with capital stock of \$20,000.

Thomasville—Flour Mill.—Lambert Bros.

will, it is said, increase capacity of their flour mill from thirty-five to seventy-five barrels; contract for machinery not awarded.

Venable—Flour Mill.—Dobbins Bros. will, it is reported, change their burr mill to the roller system, and have not placed orders for machinery.

Warrenton—Wood and Wheelwright Shop. W. E. Davis will rebuild his wood and wheelwright shop, reported lately burned.

Weldon—Brick-making Plant.—T. C. Harrison and others contemplate the establishment of a brick plant.\*

Weldon—Bridge.—The Weldon Bridge Co., previously reported as being organized, has been incorporated as the Weldon Bridge & Ferry Co. by T. C. Harrison and others. It is proposed to build an iron bridge 600 feet long and 14 feet wide over Roanoke river.\*

Wilmington—Shook Factory.—The E. H. Barnes Co. of New York will establish a plant for the manufacture of shooks at Hilton, utilizing the cheaper grades of pine lumber from the Angola Lumber Co.'s mill and dry-kilns, and will manufacture 50,000 feet per day.

Worthville—Cotton Mill.—It is said that the Worth Manufacturing Co. has purchased the Engleworth Mills, and will operate same.

#### SOUTH CAROLINA.

Aiken—Artesian Well.—The city council has passed a resolution authorizing the water-works committee to secure bids for sinking another artesian well. Address "The Mayor."

Bishopville—Telephone Company.—The Bishopville Telephone Co., with capital stock of \$5000, has been incorporated by W. S. Smith of Smithville, Nat. Barrett of Mannville and J. E. McLure of Bishopville, for the construction of telephone systems.

Columbia—Broom Factory.—John H. Sims contemplates the enlargement of his broom factory.

Laurens—Land Company.—J. O. C. Fleming, W. L. Gray, N. B. Dial and others have incorporated the Ware's Shoals Land Co., with capital stock of \$40,000, for the development of property on the Saluda river.

Norway—Saw-mill.—W. O. Tatum will rebuild his saw-mill, reported burned.

Rock Hill—Publishing.—Chartered: The Journal Publishing Co., with capital stock of \$5000, by W. J. Roddey, John M. Charlotte, J. R. Barron and others.

#### TENNESSEE.

Ashwood—Flour Mill.—The Star Milling Co. has awarded contract for a 125 to 150-barrel flour mill.

Chattanooga—Harness Factory.—The Globe Saddlery Co. (recently mentioned) is adding new machinery for making harness, and will increase its business considerably this year.

Chattanooga—Carpet Mill.—George W. Cotton, superintendent of the Gaffney Carpet Manufacturing Co. of Gaffney, S. C., states that there is no truth in the recent report that he would establish a mill at Chattanooga.

Clover—Flour Mill.—Mr. Blankinship will, it is reported, remodel his mill to the roller system, and has not contracted for machinery.

Comeo—John Wilcox will install roller-mill machinery.

Covington—Ice Factory.—John Craig, W. A. Owen and others are organizing a company for the erection of an ice factory and cold-storage plant to cost about \$8000.

Crossville—Lumber and Mining Company. The Powell Lumber & Mining Co. has been incorporated, with capital stock of \$100,000, by R. W. Powell, president; H. G. Dunbar, vice-president; J. W. Horton, treasurer, and M. A. Powell, secretary.

Fayetteville—Hoop Company.—The Standard Hoop Co. has been chartered, with capital stock of \$5000, by H. M. Eakin, J. J. Roach, Charles Harms, J. M. Eakin and others, for the manufacture of barrel heads, hoops and staves.

Lewisburg—Water-works.—Efforts are being made to secure an issue of bonds to the amount of \$30,000 for the purpose of building water-works. Additional legislation will be necessary to effect this. Address "The Mayor."

Knoxville—Foundry.—The Fair Day Foundry Co. has amended its charter, changing name to the Fair Foundry Co.

Maryville—Flour Mill.—It is reported that the Springfield Flour Mills will be remodeled.

Memphis—Power Plant.—Memphis Street Railway Co., F. G. Jones, president, contemplates the enlargement of its power plant.

Memphis—Cornmeal Mill.—Davis & A-



draws (established) have applied for charter for establishment of a 1000-barrel cornmeal mill and 15,000-bushel grain elevator, as lately reported.

Memphis—Improvement and Industrial Association.—The Binghamton Industrial and Improvement Association has been organized, with Mayor W. H. Bingham, president; W. W. Rideout, vice-president, and A. V. Coats, secretary, and W. H. Weatherly, treasurer, for the purpose of promoting the business interests of Binghamton in a manufacturing way. The aim of the organization is to secure municipal improvements, to build water-works, electric-light plant and erect about 100 dwellings, etc. For particulars address the president.

Mountain City—Flour Mill.—W. T. Shupe & Son will rebuild their flour mill, lately reported burned; building will be two stories, 25x40 feet.\*

Nashville—Paper and Box Company.—The Union Paper & Box Co. has been incorporated, with capital stock of \$35,000, by J. Lefkowitz, Sam Cohn, P. J. Lovenhart and others.

Nashville—Electric-power Plant.—The Great Falls Power Co. has been incorporated, with capital stock of \$20,000, for the purpose of utilizing the falls to generate electricity to Nashville for light and power purposes. Incorporators are Thomas G. Kittrell, George Jungermann, R. D. Goodlett, Arthur J. Dyer and Wm. O. Ventress.

Nashville—Electric-light Plant.—The city has purchased site at \$4000 for its electric light plant, previously reported. The powerhouse will be of brick, two stories, with slate roof; 500 arc lights will be installed, but plant will have capacity for doubling this amount when necessary. Bids will be received for equipment, including engines, dynamos, etc., as soon as plans and specifications are completed. Address J. M. Head, mayor.

Perry—Flour Mill.—Robert Beal will, it is reported, erect a roller flour mill.

Rally Hill—Lead-pencil Factory.—D. D. Jones, formerly of Lewisburg, is now erecting buildings at Rally Hill for the manufacture of lead-pencil timber.

Spring Hill—Flour Mill.—W. B. Parmon and others have organized a company to erect a 50-barrel flour mill. Contracts for machinery not awarded.

Trigonia—Flour Mill.—Silas Pearson will erect a flour mill, and it is reported desires prices on complete outfit of machinery.

#### TEXAS.

Ballinger—Hardware.—Chartered: Hall Hardware Co., capital stock \$30,000, by R. A. Hall and others.

Bay City—Mercantile.—Chartered: The Letulle Mercantile Co., by V. L. Letulle, with capital stock of \$25,000.

Belton—Lumber Company.—The New Belton Lumber Co. has been incorporated, with T. W. Cochran, president; Peter Hammer-smith, vice-president, and J. H. James, secretary and treasurer.

Celeste—Cotton Mill.—The Celeste Cotton Mills, reported lately to establish a 3500-spindle mill, has incorporated, with capital stock of \$30,000, by J. A. Smith, J. T. Harrell, B. F. Adams, H. E. Jones and J. E. Chiles.

Clarksville—Mercantile.—Chartered: The Barry Grocery Co., with capital stock of \$100,000, by J. D. Barry and others.

Cooper—Electric-light Company.—Chartered: The Cooper Electric Light Co., with capital stock of \$10,000, for supplying light, heat and power, by Charles Tuttle, Wm. R. Evans and Ed. S. Kelley of Kaufman, Texas.

Cumby—Cottonseed-oil Mill.—The establishment of a cottonseed-oil mill is contemplated. Levi Mercer can give information.

El Paso—Mercantile.—Chartered: The McCutcheon-Payne Merchandise Co., capital stock \$50,000.

El Paso—Electric Company.—The Saudnu Electric Co. has been incorporated, with capital stock of \$10,000.

El Paso—Electric-light Company.—The Southern Electric Co., capital stock \$10,000, has been organized for the purpose of erecting and repairing electric-light and power plants, by B. L. Berkey, G. A. Andrews and others.

El Paso—Stockyards Company.—The International Stockyards Co. has been incorporated, with capital stock of \$400,000, by John Caldwell and others.

Floresville—Brick Plant.—A company has been organized for the establishment of a plant near Floresville for the manufacture of brick. Names of interested parties will be announced later.

Fort Worth—Grain Elevator.—The T. J.

Rosenbaum Grain Co. of Chicago, Ill., with capital stock of \$500,000 and J. Rosenbaum, president, has, it is reported, purchased and will operate the Orthwein grain elevator at Fort Worth.

Galveston—Oil Development.—The Forward Reduction Co. has been organized for the purpose of prospecting for oils. The incorporators are Chauncey B. Forward of Cleveland, Ohio; L. J. Polk and James S. Waters of Galveston.

Galveston—Grain Elevator.—The Galveston Wharf Co. proposes to build a new elevator of 1,250,000 bushels capacity, and is now investigating plans.

Gonzales—Water-works Improvement.—Arthur Pallme has contract for about \$12,000 worth of improvements to the water-works plant.

Hico—Flour Mill.—J. F. Wieser & Co., recently reported as to enlarge their flour mill, have let contract for a complete 200-barrel mill.\*

Houston—Refining Company.—The Southwestern Refining Co. has been incorporated, with capital stock of \$100,000, by B. F. Bonner, John H. Kirby, Robert W. Weir and John S. Bonner for refining and developing oil, etc.

Ladonia—Mercantile.—Chartered: Erwin, Griffin & Miller, with capital stock of \$10,000, by H. P. Erwin and others.

Longview—Lumber.—The Cherokee Lumber Co. has been incorporated, with capital stock of \$5000, by W. F. Young, E. C. Taylor, E. R. Chaney and others.

Morgan—Oil Mill.—A company with capital stock of \$25,000 is being formed for establishment of a cottonseed-oil mill. Address Morgan Mill & Improvement Co.

Mount Pleasant—Ice Factory.—The Farmers & Merchants' Cotton Oil Co. will erect ice plant in connection with its oil mill.

Olive—Saw-mill.—Olive, Sternberg & Co. are installing additional machinery and increasing the capacity of their lumber mill.

Orange—Water-works, etc.—The Orange Ice, Light & Water-Works Co., reported previously as to install new and additional machinery, has leased the city water-works system.

Orange—Telephone System.—W. D. Bettis of Orange and M. D. Shaw of Iowa have received franchise for construction of a telephone system in Orange.

Paris—Saddlery Company.—The W. S. Trigg Saddlery Co. has been incorporated to succeed the business of W. S. Trigg.

Paris—Cotton Mill.—The stock company reported previously as organizing for the establishment of a cotton mill has elected R. F. Scott, F. R. Fenet, H. W. Lightfoot, J. W. Haden, H. H. Kirkpatrick and others, directors. Charter will be applied for and company capitalized at \$150,000, of which \$110,000 has been subscribed.

Paris—Electric-power Plant.—A St. Louis syndicate has purchased the street railway system at Paris, and will install electric car service, either by purchasing the local electric plant or by building a new one. The directors are R. H. Cornell, W. F. Little and Chas. Hewett of St. Louis, Mo.; W. F. Dunlany and R. W. Wortham of Paris. R. F. Grimes is local superintendent.

Port Arthur—Transportation Company.—The Port Arthur Pier & Transportation Co. has been organized, with capital stock of \$10,000.

Preston—Telephone Company.—The Preston Bend Telephone Co., recently reported as organized, with a capital stock of \$5000, by A. G. Noble and others, proposes to build a line from Denison, Texas, to various points in Indian Territory.\*

Rockdale—Ice Plant.—H. & G. Vogel will erect ice factory.

San Antonio—Oil Company.—The Western Texas Oil Co. has been incorporated, with capital stock of \$25,000, by W. A. Fitch, John Bollons, W. A. Shafer, W. J. Murray, G. S. Beard and W. M. Aubrey, all of San Antonio.

Seymour—Telephone Company.—Chartered: The Proffitt Telegraph & Telephone Co., with capital stock of \$10,000, by J. W. Proffitt of Proffitt, Texas; J. H. Glasgow and G. G. Garrett of Seymour.

Sherman—Flour Mill.—The Chapman Mill Co. will remodel its flour mill and increase capacity.

Sherman—Flour Mill.—The Diamond Mill Co. will remodel and increase its capacity.

Sherman—Flour Mill.—The Eagle Mills will, it is reported, be remodeled to the latter system and capacity increased to 400 barrels per day. A 100-barrel meal mill will also be added.

Smithville—Cheese Factory.—The establishment of a cheese factory is contemplated by W. E. Welsh.

Stone-Improvement Company.—A company has been organized at Brenham, Texas, by W. A. Wood, R. A. Schuereberg, W. J. Graber and others for the purpose of establishing and maintaining a pleasure resort.

Uvalde—Coal Mine.—Jack Burt has found a vein of coal, and it is reported will make arrangements for mining.

Waco—Oil Company.—The Waco-Beaumont Oil Co. has been incorporated, with capital stock of \$50,000, by L. W. Campbell, W. M. Breustedt, G. H. Randle and A. Symes, all of Waco.

Wharton—Mercantile.—Chartered: G. W. Deator & Co., with G. W. Deator, secretary.

Wilburton (P. O. at Tamina)—Lumber Mill. The Lone Star Lumber Co. has been chartered, as recently reported, and will have a mill of 40,000 feet per day capacity.

Winnabow—Oil Mill.—Garman & Sons will establish a cottonseed-oil mill in connection with their ginney.

Winnabow—Water-works.—R. C. Campbell will, it is reported, construct water-works system.

Yorktown—Electric-light and Ice Plant.—The citizens of Yorktown, in connection with Mr. Clark of Galveston, will erect electric-light and ice plant at a cost of \$8000. Address "The Mayor."

#### VIRGINIA.

Amherst—Flour Mill.—Gus Bladock will, it is reported, erect a 30-barrel flour mill, and has not contracted for machinery.

Big Stone Gap—Tannery.—The American Leather Co. of New York, which is building a large extract plant at Big Stone Gap, has purchased the plant of the Virginia Tanning & Extract Co., and will operate the two plants under one management.

Danville—Blanket Mill.—I. N. Dodson contemplates organizing a company for the manufacture of woolen blankets.\*

Fredericksburg—Mineral-water Company.—Messrs. Baker, Middleton and Tapp of Kentucky have purchased the Thomas Springs property in Culpeper county and organized the Berry Hill Mineral Springs Co. for putting the water on the market and for making other improvements, including the erection of a hotel, etc.

Fredericksburg—Gold Mine.—Mr. De Costa of New York and others have leased from John R. MacPherson the Rappahannock gold mine, and will develop it, installing the latest improved machinery. John R. MacPherson can probably give information.

Gate City—Cannery.—The establishment of a cannery is talked of. Names of interested parties will be announced later.

Hampton—Laundry.—The Hampton Steam Laundry Co. has been incorporated, with authorized capital of \$2000, by H. H. Holt, president; William Burbage, vice-president, and R. M. Booker, secretary and treasurer.

Lexington—Improvement Company.—The Rockbridge White Sulphur Springs Co. has been organized for the purpose of improving the McCluer's Springs property, about eight miles from Lexington, capital stock to be not less than \$1000.

Lynchburg—Mercantile.—L. Z. Morris, S. W. Fleishman, Richmond; W. S. Mays of Lynchburg and others have organized the W. S. Mays Shoe Co.; authorized capital \$5000.

Lynchburg—Laundry and Dyeing Plant.—The Hill City Laundry Co. has been chartered, with capital stock of not less than \$1000 nor more than \$5000, for conducting a general laundry and dyeing business. C. B. Johnson is president; J. Randolph Shaner, secretary and treasurer.

Newport News—Improvements.—Chartered: The Hampton Roads Pier Co., with authorized capital stock of \$100,000, by A. A. Moss, president; A. E. Barcher, vice-president; J. H. Glikerson, secretary, and T. C. Powell, treasurer, for the construction of a pleasure pier and making other improvements.

Newport News—Paving.—The city will hold an election on May 21 to decide the issuance of \$250,000 of bonds (lately reported) for street paving; A. A. Moss, mayor.

Newport News—Shipyard.—The Newport News Shipbuilding & Dry-Dock Co. will probably add some machinery to its plant, and possibly construct a cantilever crane and shipways during the coming year.

Norfolk—Granite Quarries.—The Fountain Creek Granite Co. has been incorporated, with capital stock of not less than \$8000 nor more than \$50,000, for development of granite quarries in Virginia and North Carolina. C. W. Pentress is president; J. Frank East, vice-president; J. B. Blackburn, secretary, and Nathaniel Beaman, treasurer.

Richmond—Power Plant.—The Richmond

& Petersburg Electric Railway Co. has had plans made by B. W. Poindexter for its proposed \$15,000 power plant to be erected near Manchester. J. T. Wilson has been asked to estimate the cost of constructing the buildings.

Richmond—Truss, etc., Factory.—The Richmond Truss Manufacturing Co. has been incorporated, with capital stock of not less than \$1000 nor more than \$5000, for manufacturing medical appliances. Sol. Cutchins is president; William R. Butler, vice-president, and B. A. Blenner, secretary and treasurer.

Richmond—Brokerage Business.—Charter has been granted to Lefebvre-Armistead Company; authorized capital, \$5000; president, W. C. Lefebvre; secretary, T. S. Armistead.

Richmond—Mercantile.—Chartered: The William Temple Co., with capital stock of \$5000, by C. P. Temple (president) and others.

Staunton—Water Company.—The Imperial Natural Spring Water Co. has been chartered, with capital stock of \$300,000, for the purpose of dealing in mineral water, etc. James Gwatkin is president; J. M. Lamadrid, vice-president and manager, and Henry T. Fay, secretary, all of New York.

Williamsburg—Reservoir.—Plans have been accepted for the proposed 120,000-gallon reservoir at the Eastern State Hospital, and bids for the work will be asked at once. Contract to be let April 10. Plans and specifications can be seen at office of Superintendent Walter H. Taylor, Jr., Norfolk, Va., engineer in charge of work.

Winchester—Woolen Mill.—The Winchester Woolen Mills will, it is reported, install \$10,000 worth of new machinery.

#### WEST VIRGINIA.

Adamstown—Coal Mines.—David C. Williams of Perryopolis, Pa., has purchased 800 acres of coal lands at Adamstown, as reported recently, and will develop, erecting and equipping a plant for a large tonnage. Will soon be in the market for machinery and other supplies.\*

Bramwell—Coal Mines, Coke Ovens, etc.—The Sagamore Coal & Coke Co., reported during the week as incorporated, has leased 2000 acres of coal lands and will begin developments on a large scale at once; during this season company will also begin the construction of 200 coke ovens and erect houses, tipples, store, etc. An electric-light plant will be installed later on. Address inquiries to Stuart M. Buck.

Bruceton Mills—Flour Mill.—Emanuel Beeghley will, it is reported, remodeled his flour mill from the reel bolt to the sifter system, and has not awarded contract for machinery.

Camp Creek—Coal and Coke Company.—James Clark, Baltimore, Md.; Geo. T. Carter, Bristol, Tenn.; W. J. Brown and T. P. Trigg of Abingdon, Va., have organized the Pinnacle Coal & Coke Co. for the purpose of developing coal mines and manufacturing coke; authorized capital \$100,000.

Piedmont—Coal Mine.—The Marion Coal Co. has been incorporated, and will begin the development of coal mines near Piedmont.

Piedmont—Coal Mines.—The Piedmont & Potomac Coal Co., reported as preparing to open up a coal mine near Piedmont, has incorporated, with capital stock of \$50,000, by Eugene K. Graham, E. J. D. Cross, Julius W. Stuart, Herbert R. Preston, all of Baltimore, Md., and others.

Randolph County—Timber-land Development.—The Raine-Andrews Lumber Co. has been organized, with capital stock of \$200,000 and principal office at Elkins, W. Va., by T. W. Raine, John Raine of Empire, Pa.; F. L. Andrews and W. M. Andrews of New Bethlehem, Pa., for the development of 10,000 acres of timber lands in Randolph county. Contracts will be awarded at once for the erection of a saw-mill, equipment to include single band and resaw.

West Virginia—Coal and Timber Lands.—T. King Wilson of Chillicothe, Ohio, has been negotiating the purchase and sale to a syndicate of capitalists of about 13,000 acres of coal and timber lands in Virginia and West Virginia; purchasers intend developing the property at once.

#### BURNED.

Ashland, Ky.—The Williams Wheel Co.'s plant; estimated loss \$50,000.

Baltimore, Md.—The harness and saddlery factory of the Startzman-Mililkin Company, the plant of the Ferris-Noeth-Stern Company (bakers' and confectioners' supplies), and the shirt factory of Steppacher & Stern; aggregate loss estimated at \$85,000.

Bardstown, Ky.—The Broadway roller mill and grain elevator; estimated loss \$14,000.



Cedartown, Ga.—The J. T. West ginney and lumber mill.

Daleville, Ark.—The saw-mill of the Arkadelphia Lumber Co.

Dallas, Texas.—The Trinity Cotton Oil Co.'s plant.

East Newmarket, Md.—The saw-mill of G. A. Thompson & Son.

Eutaw, Ala.—The warehouse of the Planters' Warehouse & Commission Co.; estimated loss \$100,000.

Frederick, Md.—The Frederick Elevator, leased by the Mountain City Milling Co.; estimated loss \$44,000.

Frederick, Md.—Marshall Font's bending and spoke works damaged; loss about \$300.

Gilmer, Texas.—Commercial Lumber Co.'s dry-kiln; loss about \$300.

Grapeland, Texas.—Henry Pennington's cotton gin and mill; loss \$1500.

Nashville, Tenn.—The saw and planing mill plant of John B. Ransom & Co. at West Nashville; estimated loss \$140,000.

Norway, S. C.—W. O. Tatum's saw-mill; estimated loss \$300.

Olustee, Fla.—Eppinger & Russell Co.'s saw-mill; estimated loss \$20,000.

St. Joseph, Mo.—The shoe factory of Noyes, Norman & Co. and the overall and shirt factory of Richardson, Roberts & Byrnes; aggregate loss \$100,000.

St. Louis, Mo.—The ice storage plant of the Anheuser-Busch Brewing Co., the repair shops of the American Car & Foundry Co., the pickle factory of Stule & Co.; aggregate loss estimated at \$100,000.

Winchester, Tenn.—The Town Creek Woolen Mills; estimated loss \$12,000.

## BUILDING NOTES.

Anniston, Ala.—School.—Prof. W. A. White and E. R. Smith of the Anniston Training School are having plans prepared for erection of a new brick building.

Atlanta, Ga.—Business Building.—The Markham House Block will be rebuilt. Address Building Inspector Frank A. Pittman.

Atlanta, Ga.—Armory.—It is reported that the Gate City Guards will erect a new armory to cost \$30,000.

Atlanta, Ga.—Capt. W. D. Grant will erect a four-story building to cost \$100,000.

Atlanta, Ga.—Warehouses and Wharfage. The city is having plans made for enlarging its wharf and warehouses. Address "The Mayor."

Bartow, Fla.—Building.—E. C. Stuart will erect two-story brick building, as lately reported, 50x93 feet.

Birmingham, Ala.—Store Building.—A. J. Krebs & Co. have contract for construction of three-story brick store building to cost about \$30,000 for Earle, Terrell & Co.

Buckeytown, Md.—School.—Contract has been let for enlargement of Buckingham Industrial School to Newton R. Shafer. Improvements, it is estimated, will cost about \$15,000.

Caldwell, Texas.—Armory.—The Caldwell Military Co. will erect an armory and opera-house.

Carrollton, Ga.—Church.—The First Methodist congregation will build new brick or stone church; Rev. H. J. Ellis, pastor.

Cedartown, Ga.—The city will decide April 6 the issuance of \$6000 of bonds for erection of city hall, to include prison. Address L. S. Ledbetter, mayor.

Charlotte, N. C.—Office Building.—The erection of an office building is projected. Address Abbott & Stephens.

Chestertown, Md.—School Building.—W. S. Culp and A. M. Culp have received contract for erection of Chestertown's new school building, reported during the week; estimated cost \$15,000.

Clarksburg, W. Va.—Hotel.—The hotel previously reported to be built by Judge Nathan Goff will, it is estimated, cost about \$150,000. Harrison Albright is the architect, and has completed plans and specifications.

Columbia, S. C.—Hall Building.—Walter & Legare are preparing plans for a steward's hall building for the South Carolina College, building to be of brick and cost \$3000. Drawings will be ready for contractors April 4.

Danville, Ky.—Church.—The Baptist congregation will, it is said, build a \$20,000 church. Address "The Pastor."

Durham, N. C.—Hospital.—The colored hospital previously reported to be established will be styled the Lincoln Hospital, with John Merrick, president; J. A. Dodson, vice-president, and W. G. Pearson, secre-

tary; plans have been prepared, and work on buildings will be commenced at once.

Ennis, Texas.—Church.—The Methodist Episcopal congregation will erect a \$10,000 church; Rev. J. T. Duncan, pastor.

Frederick, Md.—Hospital.—Leander Neal, Baltimore, Md., will prepare plans for proposed \$6000 building for the Frederick City Hospital Association.

Gastonia, N. C.—Schools.—The city will vote on the issuance of \$15,000 of bonds for graded schools May 6; William H. Lewis, mayor.

Hagerstown, Md.—School.—The board of county school commissioners expects to erect a two-story brick annex to cost about \$7000 to the Broadway School.

Haleyville, Ala.—Cotton Warehouse.—Haley Bros. have under construction a cotton warehouse.

Haleyville, Ala.—Building.—John S. Curtis will erect two-story business house.

Halltown, Md.—Church.—The Methodists will erect a new church to cost \$2500. Address "The Pastor."

Huntsville, Ala.—Opera-house.—Frank Cox is organizing a company for the purpose of building and managing opera-house to seat 1200.

Jesup, Ga.—School.—Jesup has voted an issue of \$10,000 of bonds for the purpose of erecting two school buildings, one of brick and one of wood; S. F. Ellis, mayor.

Kansas City, Mo.—Office Building.—Permit has been issued to J. A. Rose for the erection of a six-story office building to cost \$60,000.

Kansas City, Mo.—Business Block.—The Genesee Improvement Co. will erect two-story business block. Address C. F. Morse.

Kansas City, Mo.—Theater.—Col. Willis Wood of St. Joseph, Mo., has received contract for erection of the new Baltimore Theater at Kansas City, to be erected at a cost of \$200,000.

Knoxville, Tenn.—Depot.—It is reported that Frank P. Milburn of Columbia, S. C., who prepared the plans for the Southern Railway's proposed depot at Knoxville to cost \$70,000 (previously mentioned), will ask for bids on erection of building in April or May. Steam heat, gas and electric-light equipment will be installed.

Knoxville, Tenn.—Building.—E. A. Stumpf will erect a five-story brick building.

Knoxville, Tenn.—Hotel.—Dr. J. H. Sensenbaugh has purchased site and will erect a hotel at Straw Plains.

Knoxville, Tenn.—Church.—It is reported that the Presbyterian congregation will have plans made by Baumann Bros. for the erection of a brick and stone structure to cost about \$30,000. Address "The Pastor."

Lexington, Ky.—Depot.—It is reported that the Chesapeake & Ohio Railroad Co. will probably build a new passenger station at Lexington in connection with other roads entering the city. Address C. E. Doyle, general manager, Richmond, Va.

Louisville, Ky.—Hospital.—D. X. Murphy & Co. have made plans for hospital for Franciscan Sisters.

Louisville, Ky.—Hospital.—Bids are being accepted for improvements at the Norton Infirmary to cost \$40,000. Plans have been prepared by D. X. Murphy & Co., which call for four-story brick building 40x120 feet, elevator, etc.

Louisville, Ky.—Building.—Clark & Loomis have made plans for an addition to J. F. Whitesides' bakery, 55x300 feet.

Macon, Ga.—Auditorium.—Efforts are being made for the erection of the auditorium lately noted, and a committee has been appointed to secure subscriptions. Mayor Bridges Smith is at the head of the movement.

Maynardville, Tenn.—Courthouse.—Sealed bids will be received by Coram Acuff until April 1 for erection of courthouse for Union county, Tennessee; plans and specifications on file at office of county clerk, and at office of Geo. F. Barber & Co., architects, Knoxville, Tenn.; usual rights reserved.

Memphis, Tenn.—Clubhouse, etc.—The Memphis Trotting Association has been incorporated and will expend \$200,000 in constructing a new racecourse, steel grandstand and clubhouse. C. G. R. Billings of New York is interested.

Mesquite, Texas.—School.—The erection of a \$10,000 school building is contemplated. Address "The Mayor."

Middlesborough, Ky.—Improvements.—The Middlesborough Town & Lands Co. will expend \$30,000 for improvements, including the erection of a theater or auditorium, swimming pool, barge houses, clubhouse, cottages, etc. Address Henry L. Underwood, manager.

Mineral Wells, Texas.—School.—Nichols & Mount have received contract for erection of proposed schoolhouse.

Morgantown, W. Va.—Residences.—W. L. Hagans and S. G. Chadwick will shortly let contracts for four residences to cost \$3000 each.

Mt. Savage, Md.—Church.—The Methodist Episcopal congregation will erect a new church. Address "The Pastor."

Ocala, Fla.—Hotel.—J. F. Edwards has purchased the Ocala House, and will install three to five-ton ice plant and small electric-light plant.

Paris, Texas.—Buildings.—Collins & Dunlany (dealers in machinery and mill supplies) will erect a two-story brick building 100x200 feet. Rodgers Wade Furniture Co. will erect a five-story steel and brick store building 200x200 feet. Paris Building & Real Estate Co., W. B. Wise, secretary, is erecting a three-story brick building 125x200 feet. Geo. H. Pratt will erect one-story building. S. B. M. Long is erecting two-story brick building for Rutherford & Hoover, blacksmiths.

Petersburg, Va.—Residence.—J. T. Wilson of Richmond has contract for erection of a \$10,000 residence for Dr. H. G. Leigh.

Richmond, Va.—Office Building.—M. J. Dimmock is preparing plans for five-story brick, stone and steel office building for the Virginia-Carolina Chemical Co.

Richmond, Va.—Office Building.—The Life Insurance Co. of Virginia has purchased site for \$10,000 and will, it is said, erect a large office building.

Richmond, Va.—Natorium.—Capt. Andrew Pizzini will, it is reported, build a natorium at a cost of \$25,000; building will be 340x120 feet, and the pool 200x30 feet.

Richmond, Va.—Apartment-house.—Plans are being prepared by M. J. Dimmock for apartment-house of brick and stone, having elevator, steam heating, etc.

Roanoke, Va.—Building.—J. S. Perry will erect large building.

Roanoke, Va.—College.—J. E. Parrish has contract for rebuilding Virginia College, lately reported. Address Lynchburg, Va.

Savannah, Ga.—Building.—J. D. Weed is having plans made by George T. Steinacker for erection of new building and for remodeling his present store building.

Selma, Ala.—Church.—The First Baptist congregation will erect \$25,000 church building, plans having already been accepted. Address "Pastor."

Sparks, Ga.—School Building.—The city will issue \$5000 of bonds for school building, as recently reported. Address F. W. Purdom.

Staunton, Va.—Church.—The Baptist congregation will erect church, to cost \$12,000. Address M. L. Wood, pastor.

Suffolk, Va.—Office Building.—The Home Brewing Co. (principal office, Petersburg, Va.) will erect frame office building at a cost of \$4000 at Suffolk.

Washington, D. C.—Dwellings.—John R. Taylor will erect six two-story brick dwellings, with furnace heat, to cost \$18,000. J. M. Henderson will erect five two-story brick dwellings to cost \$15,000; T. M. Halslip, architect. Kennedy & Davis will erect a four-story brick apartment-house to cost \$20,000; architect, S. Simmons. Benjamin Curtis will erect a three-story brick dwelling, with furnace heat, to cost \$5000. Vernon Brady will erect a three-story brick residence to cost \$7200; C. B. Orville, architect. Bartholomew Daily will build a two-story brick store and dwelling to cost \$5000. Thomas Judge will build a three-story brick apartment-house to cost \$6000; John Wenig, architect. J. F. Ochenenter will erect a three-story brick flat to cost \$6000; T. M. Halslip, architect.

Wellsburg, W. Va.—Residence.—J. B. Vandegriff, Pittsburg, Pa., will erect residence to cost \$100,000.

Wheeling, W. Va.—Church.—The Second United Presbyterian Church has purchased for \$20,000 a lot on which to erect a temporary church, to be followed in the future by a larger building.

Wheeling, W. Va.—Buildings.—W. A. Wilson & Sons have contract for building the Children's Home at Woodsdale, to cost when completed \$30,000, as reported during the week; also have contracts for erection of six-story business house for News Publishing Co., to be 28x128 feet and cost \$35,000; also contract for improvement of Geo. M. Snook & Co.'s building at a cost of \$25,000.

Woodville, Miss.—Building.—D. C. Bramlette will receive sealed proposals until April 3 for erection of a two-story brick building in accordance with plans and specifications on file. Usual rights reserved.

## RAILROAD CONSTRUCTION.

### Railways.

Bainbridge, Ga.—Messrs. J. H. Davidson & Co. of Thomasville, Ga., write the Manufacturers' Record that they have secured the contract for grading thirty miles of the Georgia Pine Railroad. This represents about 400,000 cubic yards of work. B. H. Hardaway has the contract for trestle-work. The railroad company will furnish the necessary rails. The grading contracts are being sublet.

Beaumont, Texas.—The branch of the Southern Pacific between Beaumont and Dallas has been completed as far as Nacogdoches, a distance of 100 miles.

Bristol, Tenn.—The Virginia & Southwestern Railroad Co. is reported as considering the construction of an extension between Clinchport and St. Paul, Va., a distance of about thirty-five miles. Cornelius Shields at Bristol is vice-president and general manager.

Cadiz, Ky.—A correspondent of the Manufacturers' Record states that about half of the capital stock of the Cadiz Railroad Co. has been subscribed, and that work is to begin about April 1. B. & P. Armitage of Philadelphia have completed surveys for the route, which will be about eleven miles long. W. C. White at Cadiz is president of the company.

Elkton, Md.—Peter J. Ford of Wilmington, Del., one of the promoters of the proposed railroad from Elkton along the Eastern Shore of Chesapeake bay, writes that the plans are under consideration, but that the organization has not as yet been perfected.

Ellisville, Miss.—The railroad being built between Ellisville and New Williamsburg, known as the Anderson Railroad, is progressing rapidly, and a considerable mileage has been graded. The Ellisville Lumber Co. is interested in the project.

Eufaula, Ala.—B. B. McKenzie of Eufaula is interested in the Eufaula & Birmingham Railroad, recently chartered by the legislature. It is proposed to build between the cities mentioned, a distance of 145 miles.

Eufaula, Ala.—W. N. Reeves is reported as interested in the plan to build a railroad between Eufaula and Apalachicola, Fla. A charter for this line was recently granted by the State legislature.

Fort Smith, Ark.—A charter has been secured in Kansas by the Hutchinson & Southeastern Railroad Co., which intends building from Hutchinson to Fort Smith, an estimated distance of 400 miles. It is stated that parties from Michigan are interested in the project.

Grafton, W. Va.—The railroad between Richwood and Camden-on-Gauley has been completed and opened for operation. It is twenty miles in length, and will be a feeder of the Baltimore & Ohio.

Hagerstown, Md.—The Western Maryland Railroad Co., it is reported, is making surveys in the vicinity of Williamsport, Md., for the purpose of constructing an extra track between Hagerstown and what is known as the Potomac Valley Junction. John M. Hood at Baltimore is president of the company.

Hagerstown, Md.—It is stated that the extension of the Hagerstown Railway to Boonsboro and Keedysville will be completed by July 1. The estimated cost is \$300,000. Christian W. Lynch of Hagerstown is president of the company.

Harrisonburg, Va.—It is reported that Messrs. Carpenter, Wright & Co. of Richmond, Va., have secured a contract to build an extension of the Chesapeake & Western Railroad a distance of fourteen miles from its present western terminus, Bridgeport. De Witt Smith, 50 Broadway, New York, is president of the railroad company.

Harrisonburg, Va.—It is reported that Messrs. August Belmont & Co., the New York banking firm, have become interested in the Chesapeake & Western Railroad, and will extend it to tidewater on Chesapeake bay, also west to the West Virginia coal fields. De Witt Smith, 50 Broadway, New York, is at the head of the railroad company.

Harrisonburg, Va.—Several meetings have been held in towns along the proposed extension of the Baltimore & Ohio Railroad between Strasburg and Harrisonburg. It is intended to complete a route to Lexington, Va. J. M. Graham at Baltimore is chief engineer.

Henrietta, Texas.—J. H. Brewster, vice-president of the Kansas, Eastern Oklahoma & Texas Railroad Co., writes the Manufacturers' Record that surveys are now being made for the route, which is estimated to



be 350 miles in length. The southern terminus is Henrietta and the northern terminus Cherryvale, Kans. The line is intended to pass through Jennings and Cleveland, Okla., and Paul's Valley, I. T. Mr. Brewster may be addressed at Cherryvale, Kans.

Jackson, Miss.—Surveys are being completed for the extra track which the Illinois Central proposes building between Jackson and Crystal Springs, an estimated distance of twenty-five miles. David Sloan at Chicago is chief engineer.

Jacksonville, Fla.—J. E. Starke, president of the Jacksonville, St. Mary's & Jesup Railroad Co., writes the Manufacturers' Record that construction will probably begin in April upon this road, and that it is to be completed within one year. Its estimated length is 100 miles. Roland Woodward is chief engineer.

Jefferson City, Mo.—William Woodburn, president of the Springfield, Jefferson City & Chicago Railway Co., writes the Manufacturers' Record that a company has been formed to build a road from Jefferson City or some point on the Missouri river to Springfield, with several extensions, which will make its entire length 275 miles. C. B. Adams is vice-president, and J. G. Briggs, general manager. The offices of the company are located at Des Moines, Iowa.

Jesup, Ga.—A correspondent of the Manufacturers' Record writes that the Plant Railway & Steamship Co. has been making surveys for a cut-off between Jesup and Folkston. If built it will be twenty-two miles in length. T. S. Tutwiler at Savannah, Ga., is chief engineer.

Knoxville, Tenn.—It is reported that the Southern Railway Co. has decided to build several miles of tracks to add to its yards in the suburbs of Knoxville. W. H. Wells at Washington is engineer.

Lake Charles, La.—The Lake Charles & Rice Belt Railroad Co. has determined to complete the surveys between Lake Charles and Gueydan immediately, and that contracts will probably be let to build this part of the line in the near future. C. A. Lowery at Lake Charles is president of the company.

Lexington, Ky.—It is reported that Charles C. Tennis of Pittsburg, Pa., is interested in the Bluegrass Rapid Transit Co., which proposes building between Lexington and Georgetown, a distance of twelve miles, and between Lexington and Versailles, a distance of thirteen miles. Local parties reported as interested are M. C. Alford and C. J. Bronston of Lexington.

Marshall, Texas.—It is reported that surveys are now being made in the interest of the Texas Southern Railway Company, which proposes building to Gilmer, Texas. The road will be about seven miles in length.

Meridian, Miss.—It is reported that arrangements are being made to build a railroad through Southeastern Mississippi, a distance of about 160 miles, by a Michigan syndicate, which has secured a large tract of timber land in this section of the South. The route is through a portion of Jackson, Harrison, Greene, Lauderdale and adjacent counties. The new route will connect with the Mobile & Ohio and the New Orleans & Northwestern at Meridian. The Danaher & Melendy Lumber Co. of Dollarville, Mich., is reported as being one of the companies interested.

Morgan City, La.—It is stated that right of way is being secured for the electric railroad between Morgan City and New Iberia, which is being promoted by F. F. Myles of New Orleans.

Natchez, Miss.—The plan to build a railroad from Natchez to Woodville has been revived by local business men and an effort made to secure the interest of the Illinois Central in the project. John F. Jenkins is one of the committee appointed to promote the scheme.

Paris, Ky.—W. J. Kennedy of Carlisle, Ky., has secured a franchise to construct an electric railroad from the Nicholas county fiscal court. It is to reach the towns of Paris, Carlisle and Sharpburg.

Raleigh, N. C.—The legislature has chartered the East Carolina, the Raleigh & Cape Fear and the Durham & Raleigh railway companies.

Relay, Md.—Surveys are now being completed for the proposed electric railroad between Relay and Alberton, along the Patuxent river valley.

Richmond, Ky.—The Louisville & Atlantic Railroad Co. has completed its extension, now under construction to Miller's Creek. C. M. Browning at Versailles, Ky., is general manager.

Sedalia, Mo.—W. B. Broomall of Chester, Pa., it is reported, has purchased the Sedalia Electric Railway system, representing the

bondholders. Gardiner Lathrop of Kansas City, Mo., acting for the bondholders, has purchased the Sedalia & Brown Springs Railway, and it is stated that both lines will be rebuilt and possibly extended.

Timpson, Texas.—The promoters of the railroad between Timpson and Panola have chartered the Timpson & Northwestern Railroad Co. to build it. Among those interested are W. G. Ragley and R. W. Wright of Timpson.

#### Street Railways.

Honey Grove, Texas.—It is reported that the Honey Grove Cottonseed Oil Co. may construct an electric railroad from the town to reach a portion of its plant.

New Orleans, La.—It is announced that the St. Charles Street Railroad Co. has determined to build an extension on several additional streets in the city. The company is considering an increase in its capital stock to the extent of \$200,000, it is understood, to build the extensions referred to. N. Riviere is secretary of the company.

Petersburg, Va.—The proposed extensions to the electric line of the Southside Railway & Development Co. include about three miles of track. It is stated that work is to begin within the next few weeks.

Savannah, Ga.—There is a possibility that the trolley lines of the Savannah Street Railway system will be extended to Montgomery, in the suburbs. What is known as the Montgomery branch is now operated by animal power. G. W. McIntire is general manager of the railroad company.

#### Machinery, Proposals and Supplies Wanted.

**Manufacturers and others in need of machinery of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery needed we will make their wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. The MANUFACTURERS' RECORD has received during the week the following particulars as to machinery that is wanted.**

**Bank Fixtures and Supplies.**—Wanted—Bank fixtures and supplies. Address L. S. Covington, assistant cashier Bank of Lumberton, Lumberton, N. C.

**Barrels.**—Williamsburg Milling Co., Williamsburg, Ky., is in the market for flour barrels.

**Belting.**—J. F. Wieser & Co., Hico, Texas, want belting for 200-barrel flour mill now under contract.

**Boiler Plant.**—Bids will be received until April 5 by James Knox Taylor, supervising architect, Treasury Department, Washington, D. C., for the new high-pressure boiler plant and the necessary rearrangement of the piping in the sub-basement of the United States postoffice and courthouse at Baltimore, in accordance with drawings and specifications, copies of which may be obtained at above office or at office of custodian of the building in Baltimore.

**Boilers.**—Kentucky Lumber Co., Burnside, Ky., will buy a 72x16-inch tubular boiler and a 100-horse-power fire-box boiler.

**Boiler and Engine.**—See "Saw-mill Equipment."

**Boilers and Engines.**—See "Steam-power Plant."

**Brick Machinery.**—T. C. Harrison, Weldon, N. C., wants prices on machinery for a complete brick-making plant.

**Brick Machinery.**—Harrisburg (N. C.) Improvement Co. wants estimates on brick-making machinery. Address S. F. Harris.

**Bridge.**—T. C. Harrison, attorney for the Weldon Bridge & Ferry Co., Weldon, N. C., wants prices for building an iron bridge 600 feet long and 14 feet wide.

**Bridge.**—Board of supervisors of Yazoo county, Yazoo City, Miss., will award contract April 1 for erection of bridge over Dunn Mound Slough; usual rights reserved; S. S. Griffin, clerk.

**Bridges.**—Vicksburg National Military Park, Wm. T. Rigby, chairman, Vicksburg, Miss., will invite competitive plans and bids for the construction of four steel bridges, two to be 400 feet long and two 75 feet long.

**Building Materials.**—Sparks Improvement Co., Sparks, Ga., wants bids on iron fronts, roofing material, lime and cement and glass for erection of nine brick stores.

**Building Materials.**—E. C. Stuart, Bartow, Fla., will purchase iron fronts, flooring and roofing for two-story brick building.

**Can Manufacturers.**—A. J. Millikin, Box 631, No. 7 Obispo street, Havana, Cuba, wants the addresses of can manufacturers and tin merchants.

**Canning Machinery.**—A. J. Millikin, Box 631, No. 7 Obispo street, Havana, Cuba, wants the addresses of manufacturers of canning machinery.

**Cottonseed-oil and Fertilizer Machinery.**—The Mississippi Manufacturing Co., Crystal Springs, Miss., wants information regarding cottonseed-oil and fertilizer machinery.

**Cotton Webbing.**—A. S. Owen, Talbotton, Ga., wants addresses of manufacturers of and dealers in cotton webbing.

**Engines.**—Harrisburg (N. C.) Improvement Co. wants estimates on two engines. Address S. F. Harris.

**Fertilizer Machinery.**—See "Cottonseed Oil."

**Flour Mill.**—W. Williamson, West, Tenn., wants to correspond with manufacturers of roller flour-mill machinery.

**Flour-mill Machinery.**—W. T. Shupe & Son, Mountain City, Tenn., are in need of flour-mill machinery, including bolting cloth, cups for elevator and belts for same, drive belts, etc.

**Foundries.**—Wm. Eley & Bro., Suffolk, Va., want to correspond with parties making small malleable-iron castings.

**Fuel-oil Burners.**—J. F. Wieser & Co., Hico, Texas, who are now erecting a 200-barrel flour mill, want fuel-oil burners for four of their boilers.

**Ginnery.**—Harrisburg (N. C.) Improvement Co. wants estimates on ginnery equipment. Address S. F. Harris.

**Grading.**—Vicksburg National Military Park, Wm. T. Rigby, acting chairman, Vicksburg, Miss., will invite bids for grading of the inside park roadway, eight miles in length.

**Iron Bedsteads.**—A. G. Forbes, Montgomery, Ala., wants to correspond with manufacturers of or dealers in materials for iron bedsteads.

**Liquid-air Manufacturers.**—J. E. McGehee, Erwin, Miss., wants the addresses of manufacturers of liquid air for commercial purposes.

**Locomotive.**—E. P. Burton & Co., Philadelphia, Pa., want wood burner, 12 to 15-ton, standard-gauge logging locomotive.

**Locomotive.**—The Richmond Cedar Works, Richmond, Va., wants good second-hand locomotive weighing about 40,000 pounds, with tender holding about 1200 gallons, 42-inch gauge.

**Machine Tools.**—Taylor & Grandberre, Alcolu, S. C., are in the market for small and light gears, machine screws, bolts, small shafts one inch diameter and six long,  $\frac{3}{8}$  by 1 journal on each end,  $\frac{1}{2}$  collar on shaft and other material for a lumber-measuring machine; or will contract to have the machine made complete.

**Mining Equipment.**—See "Paint Machinery."

**Mining Equipment.**—David C. Williams, Perryopolis, Pa., will soon be in the market for machinery and supplies for development of coal mines.

**Paint Machinery.**—William D. Ham, Hot Springs, Ark., is in the market for a 25-ton plant for manufacturing sulphuric acid, ammonia and iron paint from iron pyrites; needs hoist, crushers, concentrators, etc.

**Paint Manufacturers.**—E. L. Haughton, Pollockville, N. C., wants to correspond with manufacturers of water paints.

**Pea Huller.**—See "Threshing Machinery."

**Pottery.**—See "Woodworking Machinery."

**Printing Presses.**—Bureau of Engraving and Printing, Treasury Department, Washington, D. C., will receive sealed proposals until March 25 for furnishing eighty-five hand plate printing presses. Blank forms for proposals and further information will be furnished on application to Wm. M. Meredith, director of bureau.

**Railroad Construction.**—W. M. Blount, president Union Springs & Northern Railroad Co., Union Springs, Ala., wants prices on material and equipment for railroad construction.

**Railway Equipment.**—Durham Traction Co., Durham, N. C., will shortly place orders for steel rails, cars and other supplies.

**Railway Equipment.**—Box 146, Charlotte, N. C., wants to communicate with parties having 16 to 20-pound relaying rail, using Atlanta as basis of a freight rate.

**Railway Equipment.**—The Arkansas Lumber Co., Wells, Texas, is in the market for five miles of 25 to 35-pound first-class second-

hand rails, with joints complete. Quotations are desired on a delivered basis.

**Rod Machine.**—C. L. Neal, Lewisburg, W. Va., wants to buy a second-hand power or hand rod machine.

**Roofing.**—See "Building Materials."

**Saw-mill Equipment.**—J. A. Huff, Berea, N. C., is in the market for saw-mill equipment, including 15 to 18-horse-power boiler and engine.

**Saw-mill Machinery.**—J. C. Jackson & Sons, Wilsonville, Ala., want prices and information on an automatic gummer for circular saws fifty to sixty inches in diameter; also want prices on small engine lathe.

**Sprinklers.**—Cypress Tank Co., Bridgeport, Fla., is in the market for automatic sprinklers.

**Stapling Machine.**—W. B. Burton, 6 and 8 Monroe street, Montgomery, Ala., is in the market for stapling machine for fruit baskets.

**Steam-power Plant.**—Sealed proposals will be received until April 16 by the directors of the Gonzales Cotton Mills at office of J. P. Randle, president, Gonzales, Texas, for a complete steam-power plant, in accordance with specifications, copies of which may be had at above office or at office of R. C. Biberstein, engineer, Charlotte, N. C. Bids may be separate for engines and boilers.

**Steam-power Press.**—W. B. Burton, 6 and 8 Monroe street, Montgomery, Ala., is in the market for a steam-power press for baling excelsior.

**Telephone Equipment.**—A. W. Huggins, London, Ky., will want wire No. 10, brackets, insulator pins, etc., for construction of about seventy-five miles of system.

**Telephone Equipment.**—The Preston Bend Telephone Co., A. G. Noble, president, Preston, Texas, wants telephone supplies of all kinds except 'phones.

**Telephone Equipment.**—The Dry Run Telephone Co., Dry Run, Md., Newton Kilne, treasurer, wants prices on 'phones, wire, insulators and brackets.

**Telephone Equipment and Supplies.**—North Georgia Telephone & Telegraph Co., R. B. Russell, president, Winder, Ga., is in the market for supplies and equipment for construction of telephone system (except telephones).

**Textile.**—See "Cotton Webbing."

**Textile Machinery.**—I. N. Dodson, Danville, Va., wants the addresses of manufacturers of machinery for making blankets (woolen).

**Textile Machinery.**—The Gonzales Cotton Mills, J. P. Randle, president, Gonzales, Texas, will shortly place orders for machinery for its cotton mill, including shafting, belting, supplies, etc.

**Threshing Machinery.**—O. M. Alexander, Anniston, Ala., wants to correspond with manufacturers of pea hullers for threshing the peas from vines that have been cut down with a mower.

**Tin Merchants.**—See "Can Manufacturers."

**Wood-pulp Machinery.**—L. Rogan, Birmingham, Ala., wants the address of makers of machinery for manufacturing wood pulp.

**Woodworking Machinery.**—See "Saw-mill Machinery."

**Woodworking Machinery.**—C. A. Hall, Hall's Ferry, N. C., wants addresses of manufacturers of machinery for making well buckets and kegs.

**Woodworking Machinery.**—Union Hardware Manufacturing Co., Union, S. C., wants to purchase machinery for manufacturing dowels (hickory especially).

**Woodworking Machinery.**—W. S. & A. M. Culp, Chestertown, Md., may want a small planer and matcher.

**Woodworking Machinery.**—E. Harris, Box 631, Atlanta, Ga., wants machinery for making jugs, churns and butter jars.

**Woodworking Machinery.**—Fay Bridges of the Newman Decker Churn Co., Box 456, Paducah, Ky., will need pulleys, shafting, hangers, drills, dies, belting, etc.

**Woodworking Machinery.**—C. Hadder, Blackstone, Va., wants to correspond with manufacturers of automatic self-feeding heading, shingle and stave machinery.

**Woodworking Machinery.**—Southern Manufacturing Co., R. S. Whaley, general manager, Columbia, S. C., wants prices on hand jointer, shaper, jig saw, window-frame machine, etc.

**Woodworking Machinery.**—The Sumter Telephone Manufacturing Co., Sumter, S. C., is in the market for a small planer-knife grinding machine, new or second-hand.

**Ice Plant for Sale.**—In another column will be found a notice of a 10-ton ice plant which will be sold at Johnson City, Tenn., on May 20. A. B. Bowman, receiver, may be addressed relative to it.



## TRADE NOTES.

**Shop for Sale.**—J. H. Wells of Tampa, Fla., will correspond with those interested relative to a machine shop which is now on the market. It is well equipped for jobbing purposes.

**From Ohio and Virginia.**—Recent orders secured by the Bull Engine Co. of Erie, Pa., are for a 250-horse-power engine installed in the plant of the Marion Electric Co. of Marion, Ohio, and a 500-horse-power engine for the Norfolk navy-yard.

**Will Continue Business.**—Although the recent fire at the Olds Motor Works, Detroit, Mich., destroyed two-thirds of the plant, the company has made arrangements to fill orders with but a slight delay. Temporary buildings have been secured and machinery installed to replace that damaged by the fire.

**To Users of Rolling Stock.**—Messrs. J. R. Patton & Co. of Pittsburgh, Pa., make a specialty of dealing in steam shovels, locomotives, hoisting engines, as well as cars and rails. They have special facilities for offering rolling stock at a very low price, and one of their specialties is dealing in second-hand equipment. Anyone interested would do well to correspond with them.

**New York Agents.**—The Whitman Manufacturing Co., which recently removed its office from New York city to Garwood, N. J., has appointed Messrs. Patterson, Gottfried & Hunter of 146-150 Center street, New York city, as New York selling agents, who will carry a complete stock of the "B & C" Friction Clutches for line-shaft work. Prices and particulars can be obtained by application to them.

**New Steel Plant.**—The mills of the Sharon Steel Hoop Co. of Sharon, Pa., are nearing completion, and it is expected will be in operation within a few weeks. The plant has attracted considerable attention on account of the superior quality of the machinery installed and the many improvements which it contains. The company manufactures hoops, bands and cotton ties, and its prospects for Southern business are very flattering.

**A Mining Opportunity.**—An excellent opportunity to invest in mining lands is offered by the sale of property on George's creek, in Allegany county, Maryland. It comprises 232 acres of farming land, of which a portion is underlaid with what is known as the Big Vein coal, as well as a number of seams varying from two and one-half to five feet in thickness. Mr. Robert R. Henderson at Cumberland may be addressed for further particulars.

**A Practical Combination.**—The necessity of combining ventilation with heating is generally recognized. It may not be generally known that although the fan was first utilized on a practical scale about 1850, Mr. B. F. Sturtevant of Boston has the honor of introducing the fan and steam heater on the market, making the so-called "blower system." So prominent has Mr. Sturtevant's name been mentioned with it that frequently it is called the Sturtevant system.

**Important to Lumbermen.**—In another column will be found a proposal for cutting and delivering 800,000,000 feet of timber, including balsam, white pine and hardwoods. The tracts are located in Haywood county, North Carolina, twenty-eight miles from Newport, Tenn., and twenty-six miles from Waynesville, N. C. The timber is to be delivered regularly to the mills, which are located in the vicinity. Bids will be received for the work until April 15. S. A. Jones, National Abrasive Manufacturing Co., Waynesville, N. C., may be addressed.

**A Wide Market.**—The use of marble mosaic and granite has become very popular in the South in connection with factories and other large buildings. The National Mantel & Tile Co., Manufacturers' Record Building, Baltimore, has orders for marble mosaic for the Empire Building of Atlanta, Ga. It will require 33,000 square feet alone, and is only one of a large number of contracts which the company has been fortunate in obtaining. Its plant is especially prepared for manufacturing marble mosaic at a very low cost, owing to the improved machinery which it contains.

**For Decoration.**—The H. W. Johns Manufacturing Co., 100 William street, New York, has played an important part in educating the public in both exterior and interior decoration. A little pamphlet recently published by this company contains many suggestions of a practical nature.

## FINANCIAL NEWS.

The Manufacturers' Record invites information about Southern financial matters, items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

## New Corporations.

J. W. Standford is interested in the bank being organized at Cuthbert, Ga., with \$25,000 capital stock.

Arthur T. Kahn, it is stated, has organized a national bank at Shreveport, La., with \$100,000 capital stock.

A State bank is to be opened at Fitzgerald, Ga., with \$25,000 capital stock. Among those interested is R. V. Bowen.

Charles S. Jackson is president, and W. C. Evans, cashier, of the Ladonia National Bank, recently organized at Ladonia, Texas.

The Home Building and Loan Association has been incorporated at Perryville, Md., with \$800,000 capital stock, by Chas. C. Caldwell and others.

The Farmers and Merchants' National Bank, recently organized at Gilmer, Texas, has been authorized to begin business with \$50,000 capital stock.

The People's Bank of Berkley, Va., recently organized, has elected Foster Black, president; Joseph A. Wallace, vice-president, and W. B. Dougherty, cashier.

J. H. Winston of Weatherford, Texas, and others have secured authority from the government to organize the First National Bank at Gordon, Texas, with \$25,000 capital stock.

Arrangements have been made to reorganize the Manufacturers' Bank of Middlesboro, Ky., as a national bank and increase its capital stock to \$50,000. Robert C. Ford is one of the stockholders.

What is known as the McCutchen Bank of Shreveport, La., it is stated, will secure a charter under the national banking law, with \$100,000 capital. S. B. McCutchen is president; J. M. Tucker, vice-president, and A. M. McCutchen, cashier.

## New Securities.

Cincinnati parties have purchased the issue of \$15,000 in bonds of Fayetteville, N. C.

Duke M. Farson of Chicago has purchased the issue of \$170,000 in 4 per cent. bonds of Allen county, Kentucky.

The Wheeling & Elm Grove Railway Co. of Wheeling, W. Va., has decided to issue \$1,250,000 in bonds for various purposes.

The city of Hagerstown, Md., will vote March 25 on the question of issuing \$15,000 in bonds for improvements. Address the mayor.

F. R. Fulton & Co. of Chicago have purchased the issue of \$40,000 in bonds of Lauderdale county, Alabama, at a premium of \$2100.

The town of Leland, Miss., will receive bids until April 2 for an issue of \$10,000 in 6 per cent. bonds. J. H. Collier, mayor, may be addressed.

Logan county, Kentucky, will probably issue bonds to refund the present indebtedness. The fiscal court may be addressed at Russellville.

Town authorities of Iuka, Miss., have authorized the issue of \$10,000 in 6 per cent. bonds for improvements. The mayor may be addressed.

The park commissioners of Louisville, Ky., have decided to purchase the issue of \$250,000 in bonds, recently authorized to be sold for improvements.

The bond issue of Suffolk, Va., will amount to \$15,000 and bear interest at 4 per cent. Bids are to be received until April 1 by the town treasurer.

Ernest Lagarde & Sons of New Orleans

have purchased the issue of \$100,000 in 5 per cent. bonds of the St. Mary's drainage district, Louisiana, paying about 103.

The Conway, Gordon & Garnett National Bank of Fredericksburg, Va., has purchased the issue of \$18,000 in bonds of this city, bearing 4 per cent. interest, at 100.30.

It is announced that bids will be received until March 22 for an issue of \$40,000 in bonds of Wythe county, Virginia. The board of commissioners may be addressed at Wytheville.

Halifax county, North Carolina, will soon place on the market an issue of \$8000 in bonds to refund present indebtedness. The board of county commissioners may be addressed at Halifax.

The sale of bonds of Covington, Va., attracted bids from a number of local and outside investors. The premiums ranged from par to 2 1/2-5 per cent. Messrs. Seasingood & Mayer of Cincinnati, Ohio, were the purchasers at the latter figure.

## Financial Notes.

A recent statement issued by the Bank of Lumberton, N. C., shows surplus and profits amounting to \$11,274 on a total capital stock of \$20,000. At present the bank has nearly \$150,000 in deposits, compared with \$72,000 in 1898.

Messrs. Spencer Trask & Co. of New York in a recent circular write that the demand for securities from investors is excellent, considering the season. The circular contains a description of several bond issues which have recently been listed on the New York stock market.

## SOUTHERN COTTON-MILL STOCKS.

Quotations Furnished by Hugh MacRae & Co., Wilmington, N. C., for Week Ending March 19.

	Bid.	Asked.
Abbeville Cotton Mills (S. C.)	98	98
Aiken Mfg. Co. (S. C.)	94	97 1/2
American Spinning Co. (S. C.)	102 1/2	102 1/2
Anderson Cotton Mills (S. C.)	127 1/2	127 1/2
Arcade Cotton Mills (S. C.)	120	125
Arkwright Mills (S. C.)	120	125
Augusta Factory (Ga.)	82	85
Avondale Mills (Ala.)	85	85
Belton Mills (S. C.)	101 1/2	104
Bennettsville Mfg. Co. (S. C.)	105	108
Cabarrus Cotton Mills (N. C.)	145	152
Cannon Mfg. Co. (N. C.)	175	180
Clifton Mfg. Co. (S. C.)	180	180
Clinton Cotton Mills (S. C.)	120	120
Courtenay Mfg. Co. (S. C.)	117	120
Dallas Mfg. Co. (Ala.)	101 1/2	104
Darlington Mfg. Co. (S. C.)	96	100
Delgado Mills (N. C.)	97	100
Eagle & Phenix Mills (Ga.)	102	102
Enoree Mfg. Co. (S. C.)	118	118
Enterprise Mfg. Co. (Ga.)	101	103
F. W. Poe Mfg. Co. (S. C.)	117	120
Gaffney Mfg. Co. (S. C.)	115	117
Granby Mills (S. C.)	101 1/2	106
Granby Mills (S. C.) 1st Pfd.	101	106
Grantville Mfg. Co. (S. C.)	103	107
Greenwood Cotton Mills (S. C.)	99	102
Grendel Mills (S. C.)	100	102 1/2
Henderson Cotton Mills (N. C.)	120	125
Henrietta Mills (N. C.)	106	110
John P. King Mfg. Co. (Ga.)	100	103
Langley Mfg. Co. (S. C.)	115	120
Laurens Cotton Mills (S. C.)	142	142
Lockhart Mills (S. C.)	108	110
Louise Mills (N. C.)	103	106
Lynchburg Cotton Mills (Va.)	125	150
Lynchburg Cot. Mills (Va.) Pfd.	145	150
Manchester Cotton Mills (S. C.)	104	104
Mayo Mills (N. C.)	120	125
McColl Mfg. Co. (S. C.)	120	125
Modena Cotton Mills (N. C.)	140	145
Newberry Cotton Mills (S. C.)	115	122
Odell Mfg. Co. (N. C.)	108	111
Orr Cotton Mills (S. C.)	102	106
Pacolet Mfg. Co. (S. C.)	210	210
Pelzer Mfg. Co. (S. C.)	180	180
Piedmont Mfg. Co. (S. C.)	178	185
Raleigh Cotton Mills (N. C.)	115	115
Richland Cotton Mills (S. C.)	105	105
Richland Cotton Mills (S. C.) Pfd.	100	105
Roanoke Mills (N. C.)	103	103
Sibley Mfg. Co. (Ga.)	85	89
Southern Cotton Mills (N. C.)	97 1/2	102
Spartan Mills (S. C.)	140	140
Trion Mfg. Co. (Ga.)	125	135
Tucapau Mills Co. (S. C.)	136	136
Union Cotton Mills (S. C.)	133	133
Union Cotton Mills (S. C.) Pfd.	103	107
Victor Mfg. Co. (S. C.)	107	108
Warren Mfg. Co. (S. C.)	85	90
Warren Mfg. Co. (S. C.) Pfd.	105	105
Whitney Mfg. Co. (S. C.)	117	127
Wilmington Cot. Mills (N. C.) Pfd.	106	110
Wilkesboro Mills (N. C.)	129	129

Lundell Motors.—Bulletin No. 205, issued by the Sprague Electric Co. of 527-531 West Thirty-fourth street, New York, is devoted to illustrating and describing the Lundell motors, which have secured such an extensive reputation. They include the octagon type, the S. S. type, slow-speed motor, the round type and the M. S. type. The bulletin gives the various dimensions, voltage, etc., of each variety.

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Up to Date.—Such is the reputation enjoyed by the Hammond Iron Works of Warren, Pa. Its engines and boilers, as well as tank construction, are specialties favorably known wherever used. In a catalogue recently issued much valuable information is given relative to the construction and operation of engines and boilers, retorts, etc. The catalogue also contains a number of excellent illustrations, including several water tanks and smokestacks erected by the Hammond Works.

"Best in the World."—Such is the claim which the Stillwell-Bierce & Smith-Valle Co. of Dayton, Ohio, makes for the Victor Turbine, and many users of water-power agree with it. The latest catalogue issued by the company shows the turbines installed in water-works plants, street-railway power-houses, also illustrates some of the largest turbines in the world. The catalogue includes illustrations of the Snow water-wheel governor and other specialties which the company puts on the market.